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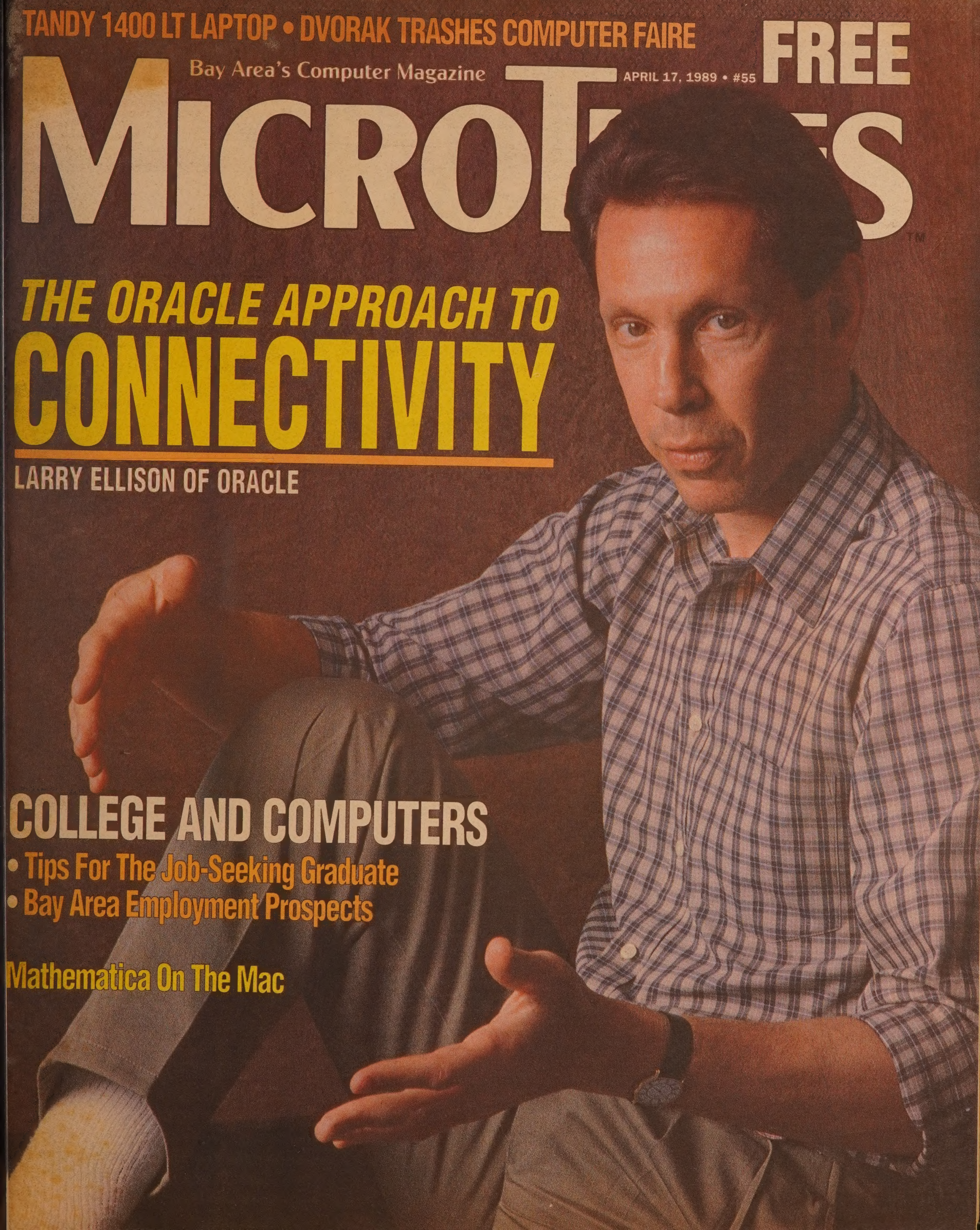
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*PC Magazine, January 12, 1988

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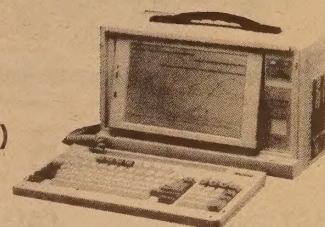
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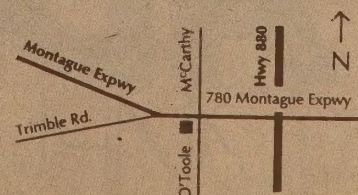
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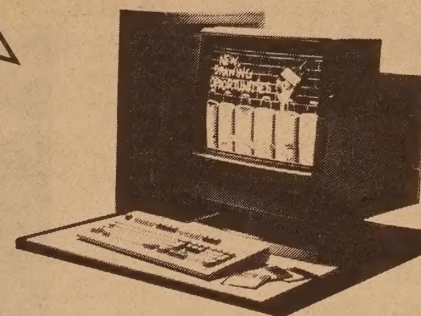
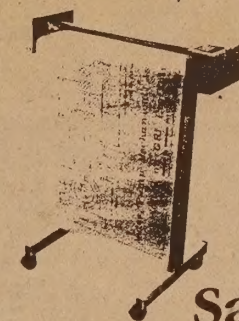
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COVER STORY

50 Connectivity: The Master Plan From Oracle

By Steve Guttman and Mary Eisenhart

"You name it, we run on it," says Larry Ellison, co-founder and CEO of Oracle Corporation, which pioneered relational database technology and offers software for machines from Macs to mainframes. The company's long-time obsession with excellence and portability have made it the third-largest independent software company in the world, and with its HyperCard-based Macintosh version carving out new territory, there's no end in sight.

COLLEGE COMPUTING

70

Finding A Job In High Tech

As hordes of graduates leave the universities in search of computer-related jobs, we asked to Bay Area placement offices and personnel directors for their viewpoints. The results are varied, interesting, and sometimes not what you'd expect.

In a related piece, graduating MBA Steve Guttman offers practical advice to job-seekers about what works and what doesn't.

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Mathematica

By Birrell Walsh

A powerful tool for doing serious math on the Macintosh.

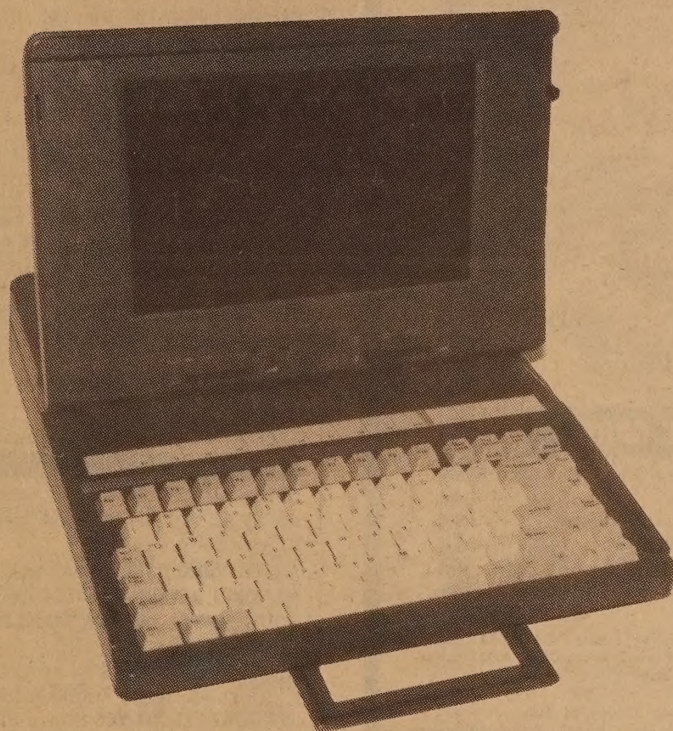
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EndNote

By Steve Guttman

A welcome help to researchers trying to keep their information orderly and annotated.

Announcing The Next Generation Of Battery Powered 286 Laptop Systems Mitsuba's *Ninja-12*



Ninja-12

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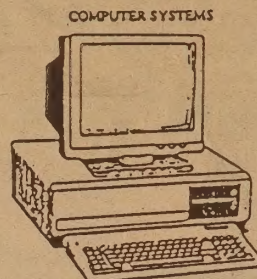
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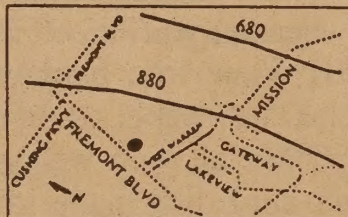
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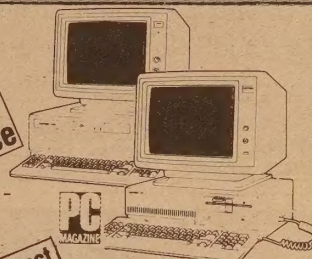
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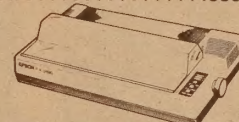
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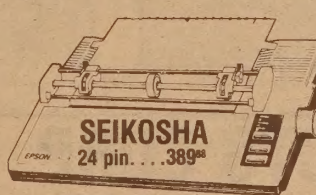
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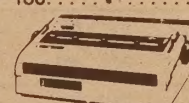
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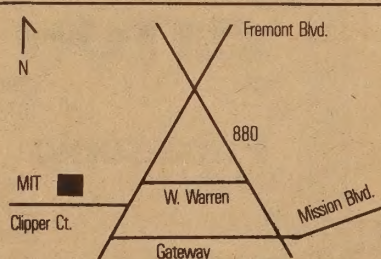
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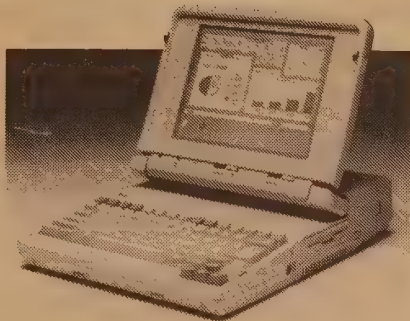
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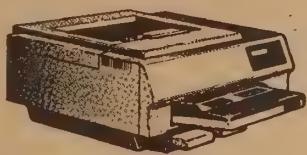


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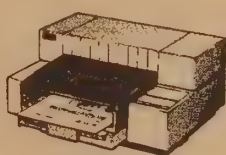
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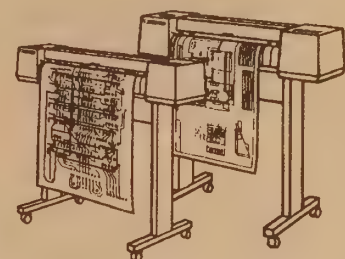
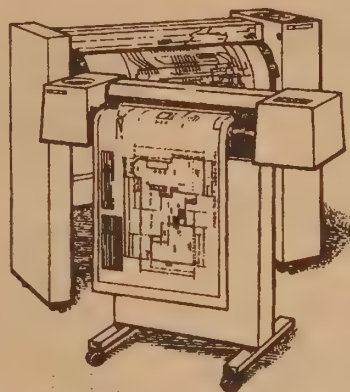
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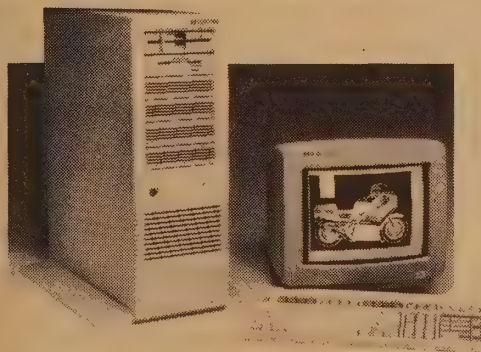
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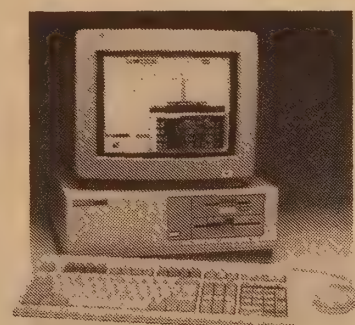
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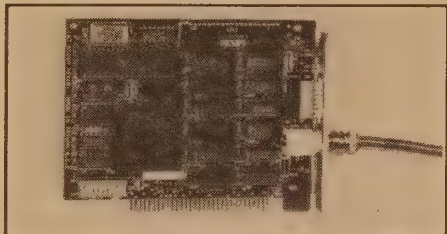
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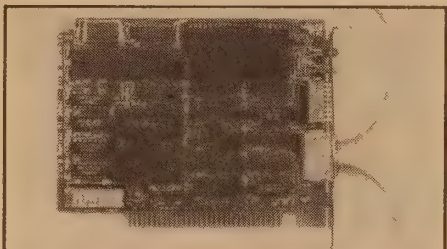
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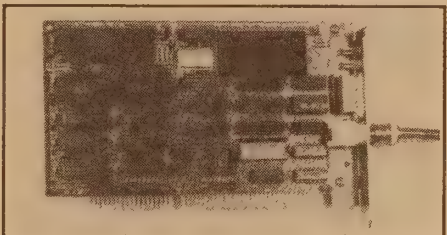
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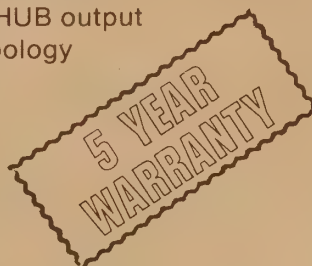
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April 18 OOP SIG Meeting. Mountain View. Software Entrepreneurs Forum. Call: Dean Ritz, (415)859-1043.

April 19 HyperCard II Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 19 PageMaker II Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 19 Intermediate Lotus 1-2-3. San Francisco. Micro Applications. Call: (415)863-4490.

April 20 PageMaker II Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 20 Career Directions In Computer Graphics. San Francisco. University of San Francisco. Call: (415)666-6107.

April 20 Intermediate Lotus 1-2-3. San Francisco. Micro Applications. Call: (415)863-4490.

April 20 The Future Of Programmer Utilities And Environments. Palo Alto. Software Entrepreneurs Forum. Call: Barbara Cass, (415)854-7219.

April 20 SEF Meeting. Palo Alto. Software Entrepreneurs Forum. Call: Barbara Cass, (415)854-7219.

April 21 Basic Macintosh Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 22 Shop Till Ya Drop Computer Swap. Oakland. Microshows. Call: 1-800-433-7469.

April 22 dBASE deMystified. San Francisco. Micro Applications. Call: (415)863-4490.

April 22 Cal Expo. Sacramento. East-West Computer Shows. Call: (415)388-8893.

April 22 Making A Breakthrough Product Make Millions! Santa Clara. Silicon Valley Entrepreneurs Club. Call: (408)562-6040.

April 24-26 Building Expert Systems Course. San Francisco. Institute For Professional Education. Call: (703)527-8700.

April 24-26 Moving To dBASE IV Seminar. San Francisco. Digital Consulting. Call: (508)470-3880.

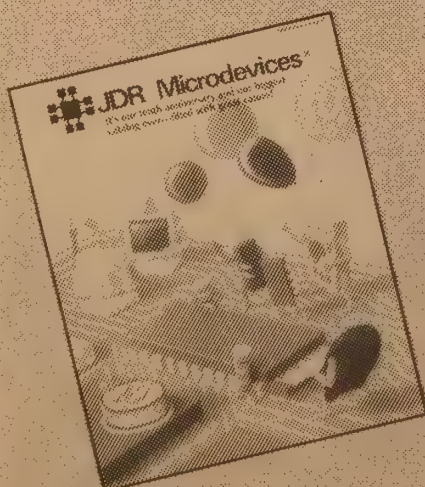
April 24 dBASE Fundamentals Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

April 25 PageMaker III Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 25 Word III Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 25 How To Successfully Automate Your Business Accounting System Seminar. San Francisco. J.C. Lukrich & Co. Call: Beth Markus,

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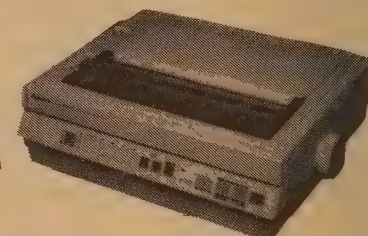
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April 25 Fundamentals Of MS Windows. San Francisco. Micro Applications. Call: (415)863-4490.

April 26-28 Storage Track '89 Computer Storage Industry Conference. Santa Clara. Dataquest. Call: 1-800-624-3282.

April 26 Introduction To Graphics Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 26 HyperCard III Hands-On Class. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 26 Use It Or Lose It: Market Change And New Technologies. Santa Clara. Business/Professional Advertising Association. Call: (408)554-9187.

April 26 Fundamentals Of UNIX. San Francisco. Micro Applications. Call: (415)863-4490.

April 26-28 On The Road To Commercial UNIX Symposium. Santa Barbara. /usr/group Call: Deborah Hay, 1-800-826-2424.

April 27 Getting The Most From Your Mac: Tricks, Shortcuts, Problem Solving, And Special Features On The Mac. Fort Mason, Bldg. D. Computer Alliance. Call: (415)771-1671

April 27 Geometric Algorithms With Neural Network Behavior. San Francisco. University of San Francisco. Call: (415)666-6107.

April 27-28 Advanced dBASE IV Topics Seminar. San Francisco. Digital Consulting. Call: (508)470-3880.

April 27 Principals Of PageMaker. San Francisco. Micro Applications. Call: (415)863-4490.

April 27 How To Buy/Build Micros. San Francisco. Micro Applications. Call: (415)863-4490.

April 27 Marketing SIG Meeting. Palo Alto. Software Entrepreneurs Forum. Call: Don Morrison, (408)425-7222.

April 28 Introduction To WordPerfect. San Francisco. Micro Applications. Call: (415)863-4490.

April 29 Shop Till Ya Drop Computer Swap. San Francisco. Microshows. Call: 1-800-433-7469.

April 29 MS-DOS Survival Skills. San Francisco. Micro Applications. Call: (415)863-4490.

May 1-3 Physical Design Workshop: Module Generation & Silicon Compilation. Newport Beach. The Computer Society Of The IEEE. Call: Bryan Preas, (415)494-4845.

May 1-2 Internet Requirements Seminar. Monterey. Advanced Computing Environments. Call: (415)941-3399.

May 2 Introduction To MS-DOS. San Francisco. Micro Applications. Call: (415)863-4490.

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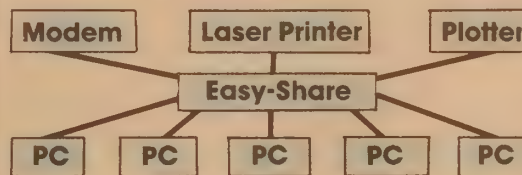


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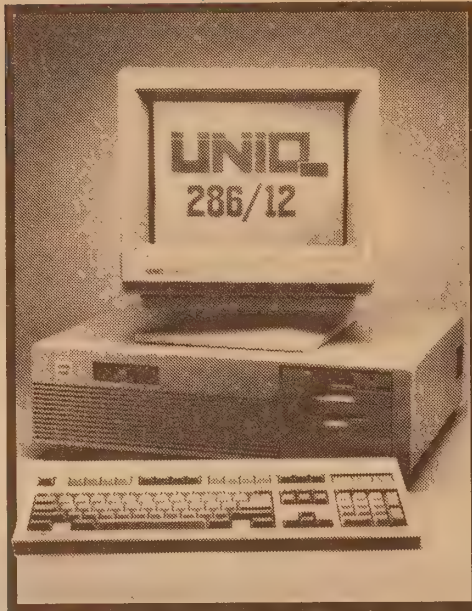
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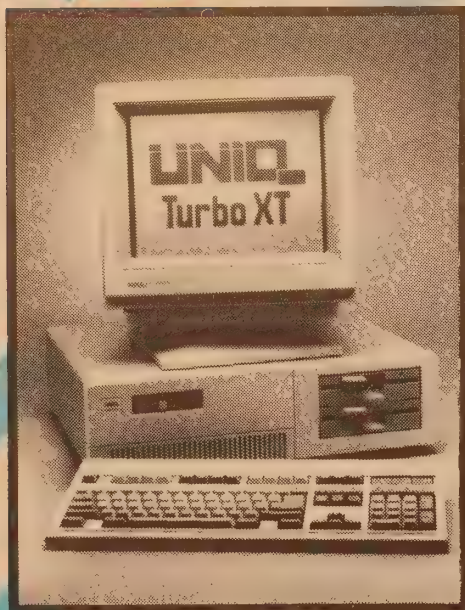
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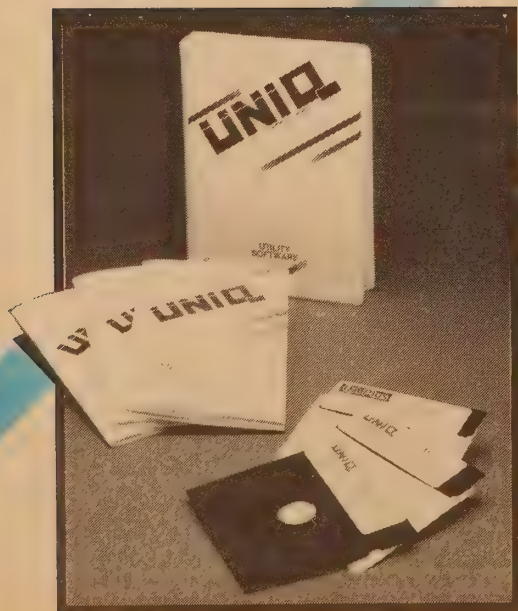
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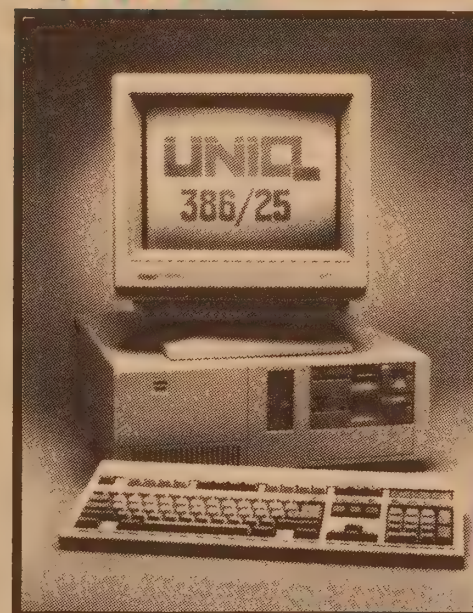
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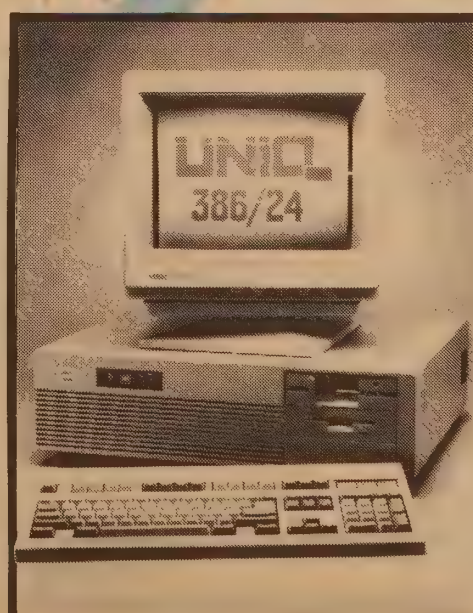
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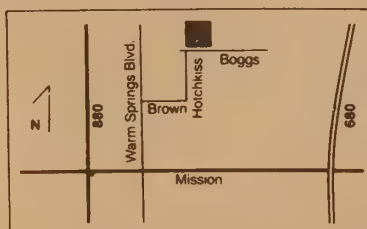
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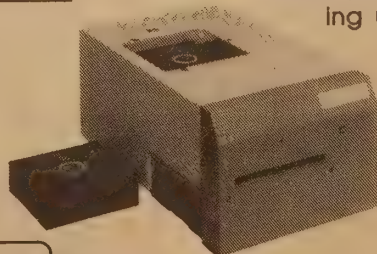
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May 3 Introduction To Lotus 1-2-3. San Francisco. Micro Applications. Call: (415)863-4490.

May 4 Workbenches: Productivity Aids For Programming. San Francisco. University of San Francisco. Call: (415)666-6107.

May 4 Introduction To dBASEIII+. San Francisco. Micro Applications. Call: (415)863-4490.

May 4 Lotus 1-2-3 Database "Power" Applications Seminar. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 5-6 Spring CUE Conference. Irvine. Computer-Using Educators. Call: (415)328-2248.

May 5-6 1989 CUE Conference. Irvine. Computer Using Educators. (415)328-2248.

June 5-8 Autodesk Expo. Anaheim. Autodesk Promotions. Call: 332-2344, ext. 2799.

May 5 Introduction To WordPerfect. San Francisco. Micro Applications. Call: (415)863-4490.

May 5-7 AppleFest Conference & Exposition. Boston. Cambridge Marketing Inc. Call: 1-800-262-3378.

May 6 LAN Essentials: Installation & Configuration Class. Oakland. DATAassociates. Call: (415)465-9083.

May 6 MS-DOS Survival Skills. San Francisco. Micro Applications. Call: (415)863-4490.

May 7-8 Third Computer Game Developers' Conference. Sunnyvale. Contact: Computer Game Developers' Conference, PO 50282, Palo Alto, CA 94303.

May 8 Timeslips III Seminar. San Francisco. Mentor Technologies. Call: 1-800-227-5502.

May 9-12 Digital Control Systems: Design Techniques & Tools Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 9-10 EuroBus/89—Germany. Muenchen Sheraton, Munich. MultiDynamics, Inc. Call: Anne Weber, (714)669-1201.

May 9-12 ADA Programming & Software Engineering: Hands-on Introduction. San Francisco. Integrated Computer Systems. Call: 421-8166.

May 9 Timeslips III Advanced Seminar. San Francisco. Mentor Technologies. Call: 1-800-227-5502.

May 9 Advanced MS-DOS. San Francisco. Micro Applications. Call: (415)863-4490.

May 10 Introduction To MS Excel. San Francisco. Micro Applications. Call: (415)863-4490.

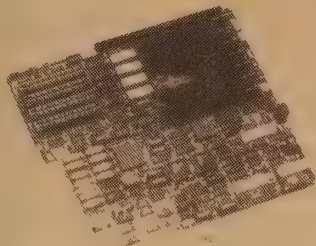
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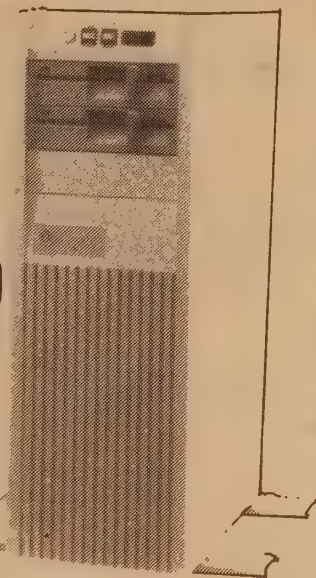
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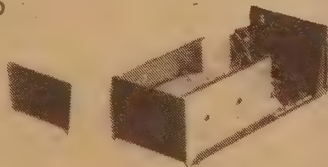
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Panasonic 1180	Call
NEC 2200	369
NEC 5200	539
Citizen	Call
Toshiba	Low

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ST251-0 40MB	339
ST251-1 40MB	389
ST4096 80 MB	Call
Teac	Call
Toshiba	Low
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May 10 Annual CPA's Accounting Software Forum. San Francisco. J.C. Lukrich & Company. Call: (415)864-6770.

May 10 How To Impress A High-tech Recruiter. Berkeley. Society For Technical Communication. Call: (415)549-1509.

May 11 Computer Seminar: Real Estate Management. San Francisco. Howard M. Haberman Associates. Call: (415)641-0850.

May 11 Advanced dBASEIII+. San Francisco. Micro Applications. Call: (415)863-4490.

May 12 Fundamentals Of UNIX. San Francisco. Micro Applications. Call: (415)863-4490.

May 12 Managing Computer Resources. San Francisco. Micro Applications. Call: (415)863-4490.

May 13 System Administration: Managing A Novell Network Class. Oakland. DATAassociates. Call: (415)465-9083.

May 13 De Anza Computer Mart. Cupertino. De Anza College. Call: (408)996-4350.

May 13 Shop Till Ya Drop Computer Swap. Alameda. Richard James. Call: 433-7469.

May 13 Cal Expo. Oakland. East-West Computer Shows. Call: (415)388-8893.

May 15 Lotus 1-2-3 Made Simple. San Francisco. Micro Applications. Call: (415)863-4490.

May 16-19 Image Processing & Machine Vision Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 16 Advanced MS-DOS. San Francisco. Micro Applications. Call: (415)863-4490.

May 17 How To Successfully Automate Your Business Accounting System Seminar. San Francisco. J.C. Lukrich & Company. Call: (415)864-6770.

May 17 Advanced Lotus 1-2-3. San Francisco. Micro Applications. Call: (415)863-4490.

May 17-18 Cal Expo. Oakland. East-West Computer Shows. Call: (415)388-8893.

May 18 Computer Seminar: Real Estate Management. San Francisco. Howard M. Haberman Associates. Call: (415)641-0850.

May 18 CD-ROM Developers Seminar. San Jose. Meridian Data, Inc. Call: (408)998-1900.

May 18 Advanced dBASEIII+. San Francisco. Micro Applications. Call: (415)863-4490.

May 19 Expert System Design And Management. San Francisco. Micro Applications. Call: (415)863-4490.

May 20 LAN Maintenance: Troubleshooting And Diagnostics Class. Oakland. DATAassociates. Call: (415)465-9083.

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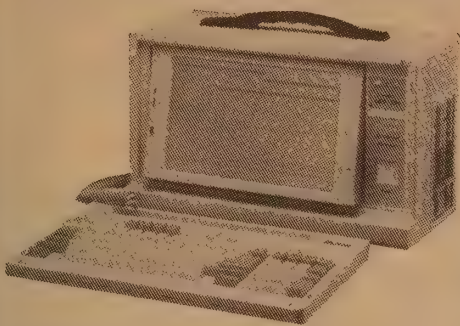
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MICRO 286 LAPTOP

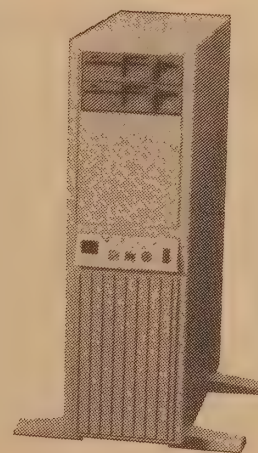


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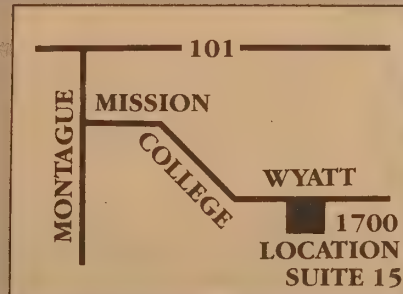
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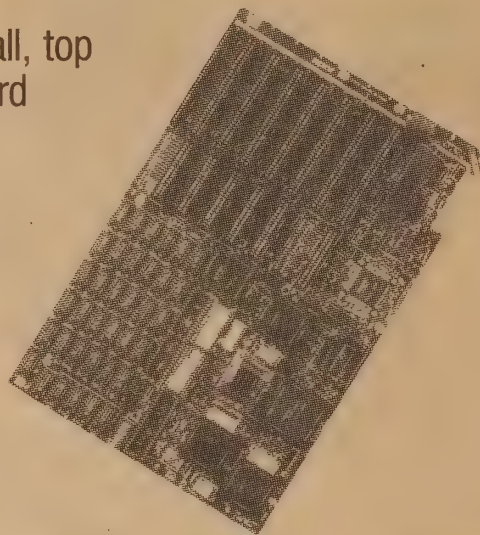
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May 20 Shop Till Ya Drop Computer Swap. Alameda County Fairgrounds. Microshows. Call: 1-800-433-7469.

May 20 dBASE deMystified. San Francisco. Micro Applications. Call: (415)863-4490.

May 20 LAN Maintenance: Troubleshooting And Diagnostics Seminar. Oakland. DATAassociates. Call: (415)465-9083.

May 21-24 SPA Symposium. San Diego. Software Publishers Association. Call: Jayne White, (202)452-1600.

May 21 Cal Expo. Oakland. East-West Computer Shows. Call: (415)388-8893.

May 22-25 Basic Project Management: Planning, Scheduling, And Control Information Meeting. San Francisco. American Management Association. Call: Vern Lautner, (212)903-8208.

May 22 dBASE deMystified. San Francisco. Micro Applications. Call: (415)863-4490.

May 23-25 Systems Design & Networks Conference. Santa Clara. Computer Society Chapter Of Santa Clara Valley. Call: Kenneth Majithia, (408)256-4914.

May 23-26 Microprocessor Troubleshooting: Hands-On Tools & Techniques Seminar. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 23 Computer Seminar: Real Estate Management. San Francisco. Howard M. Haberman Associates. Call: (415)641-0850.

May 23-26 CASE: Computer-aided Software Engineering, Hands-on Course. San Francisco. Integrated Computer Systems. Call: John Valenti, (415)421-8166.

May 23-26 Effective Skills For Technical Managers Course. San Francisco. Integrated Computer Systems. Call: John Valenti, (415)421-8166.

May 23 Automating Your Accounting System With Solomon—See What It Can Do For Your Business! San Francisco. J.C. Lukrich & Company. Call: Beth Markus, (415)864-6770.

May 24 Advanced DOS Seminar. Oakland. DATAassociates. Call: (415)465-9083.

May 25 CPA's Accounting Software Forum. San Francisco. J.C. Lukrich & Co. Call: Beth E. Markus, (415)864-6770.

May 27 Amiga Computer Animation Festival. San Francisco. Artists' Television Access. Contact: Craig Baldwin, 992 Valencia St., San Francisco, CA 94110.

May 28 San Francisco Computer Show, Sale, And Swap. Fort Mason Center. Compu-Shows. Call: (415)931-0423.

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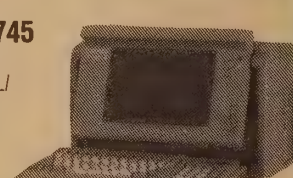
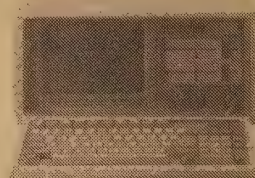
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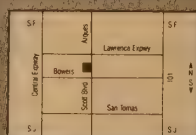
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May 31 Portable Computing '89. Santa Clara. International Data Group. Call: 1-800-225-4698.

May 31 Introduction To DOS Seminar. Oakland. DATAAssociates. Call: (415)465-9083.

June 3-5 Showbiz Expo. Los Angeles. Live Time, Inc. Call: (213)668-1811.

June 3 LAN Essentials: Installation And Configuration Class. Oakland. DATAAssociates. Call: (415)465-9083.

June 3 LAN Essentials: Installation And Configuration Seminar. Oakland. DATAAssociates. Call: (415)465-9083.

June 4-8 1989. IEEE International Conference: Computer Vision & Pattern Recognition. San Diego. The Computer Society Of The IEEE. Call: Dr. Rama Chellappa, (213)743-8559.

June 5-8 1989 AIIM Show And Conference. San Francisco. Association For Information And Image Management. Call: (301)587-8202.

June 5 IEEE Workshop On AI For Computer Vision. San Diego. The Computer Society Of The IEEE. Call: (213)743-8559.

June 6-9 Computer Network Architectures & Protocols Course. Palo Alto. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 6 How To Successfully Automate Your Business Accounting System. San Francisco. J.C. Lukrich. Call: Beth Markus, (415)864-6770.

June 7 Intelligent Mapping '89: Focus On Desktop Mapping. Anaheim. Geographic Information Systems. Call: 1-800-882-2058.

June 7 Advanced DOS Seminar. Oakland. DATAAssociates. Call: (415)465-9083.

June 10 System Administration: Managing A Novell Network Class. Oakland. DATAAssociates. Call: (415)465-9083.

June 10 System Administration: Managing A Novell Network Seminar. Oakland. DATAAssociates. Call: (415)465-9083.

June 13-16 Troubleshooting Datacomm & Networks: Hands-on Workshop. Palo Alto. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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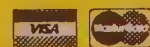
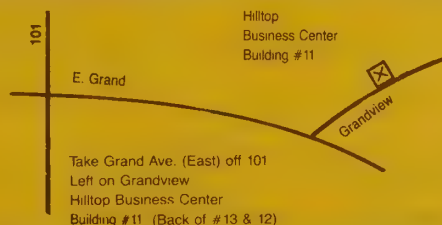
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FEATURES

- Intel 80386-16 microprocessor • Socket for 80287 option (5 or 8 MHz)
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- Six 16-bit and two 8-bit expansion slots • W.D. compatible combination, 2 hard disk/2 floppy, controller

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In addition to its eight slots the 3000A offers front access to as many as 5 half-height drives. There's plenty of room for hard drives as well as additional floppy disk drives and an internal tape drive.

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The ARGO 3000A is designed and manufactured in the USA; the system is engineered to provide superior performance and reliability. All Model 3000A computers are burned in and completely factory tested to assure complete reliability. MADE BY EVEREX.

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The ARGO 1700C has eight industry standard expansion slots, four 16-bit and four 8-bit, leaving plenty of room for expansion with memory boards, graphics adapters, I/O boards, network cards, a modem, etc. These are industry standard slots which can accommodate literally hundreds of currently available expansion products.

SPEED SELECTABLE

In order to provide compatibility with speed sensitive programs, the 1700C furnishes speed selection of 12 or 8 MHz. To make the selection as easy as possible, it can be accomplished from the keyboard or by front panel switch. To provide increased hardware compatibility the 1700C provides configurable wait states for the bus expansion slots.

A TRUE 12 MHz

The machine uses an 80286-12 microprocessor to offer true 12 MHz performance with complete reliability. Unlike some machines that push an 8 or 10 MHz processor beyond their rated speed, the ARGO 1700C uses an actual 12 MHz processor running at 12 MHz, Zero Wait State!

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QUICK COMPARISON				
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Microprocessor	80286-12	80286-10	80286-12	80286-10
Check Speed MHz	12	10	12	10
CPU wait state	0	1	1	0
Norton SI rating*	15.3	10.1	11.5	11.5
Expansion slots	8	3	8	7

⁺ **MONOGRAPHICS SYSTEM PRICE INCLUDES:** In addition to above features and standard equipment, EVEREX Evergraphics plus Hercules compatible 132x64 Hi-Res Video Card, 12" Hi-Res Amber Monitor with Swivel Base, and Parallel Printer Port.

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Judge Gives Apple First Win In MS/H-P Suit

In what many lawyers consider a significant blow to Microsoft, US District Court Judge William Schwarzer ruled that Microsoft's *Windows* version 2 was not covered in the 1985 agreement between Apple and Microsoft. Although the judge did not rule on anything else of substance in the case, the ruling eliminates what Microsoft Chairman Bill Gates has said is its most obvious defense. The ruling indicates that the judge feels that the look of *Windows* 2 is significantly different enough from version 1 to warrant a full trial on Apple's claim that *Windows* 2 and Hewlett-Packard's *New Wave* add-on infringe on Apple's visual copyrights.

The ruling came exactly a year after Apple sprung the suit in a surprise move against Microsoft (Hewlett-Packard is now considered to be an insignificant partner in the case). Although the merits of Apple's copyright case have been hotly debated in the intervening year, little attention has been placed on Microsoft's main initial defense.

Both parties agree that in 1985 Apple and Microsoft signed a cross-licensing agreement that indemnified Microsoft from action by Apple for Microsoft's *Windows* package. At the time, the only version of *Windows* that was available was version 1. In its response to Apple's lawsuit, Microsoft claimed that the agreement covered future versions of *Windows*. Judge Schwarzer disagreed, opening up the case to arguments about what the difference between the two versions are and how these differences affect any visual copyrights which Apple might have.

It is not clear from the initial arguments how Apple will proceed with its arguments. The next step is a lengthy discovery and deposition process, where each side gets to view material owned by the other side, and officials from each side will have to give private testimony. This allows the lawyers for each side to prepare their cases. This process can be short (and it is likely that Microsoft hopes that it is), but it can also drag on for years, as seen in the *Lotus vs. Paperback Software* case. Microsoft got caught up in its claim that Apple owned some copyrights, so that it had to sign the 1985 agreement, but now says that Apple has no such copyright.

The case gives a good base for resolving the issue of visual copyright and of required uniqueness for a copyright. There have been many conflicting lower-court rulings on how strong a claim there is for visual copyrights. Some courts have said that even one screen was sufficient for infringement, others insisted on much more. Apple is clearly not trying to take the low road, since it readily admits that many of the Macintosh screens in question are inspired by other companies, notably Xerox. Microsoft would like to

see the judge rule that the Macintosh screens were not only inspired, but they were derived from the Xerox screens.

The lawyers for both sides have, of course, overstated their respective cases. Apple may have exaggerated its rights by trying to encompass all of the Macintosh display, even the parts that are clearly derived from other sources or are so obvious as to be unprotectable. Microsoft, on the other hand, has stated that Apple has absolutely no possible visual copyright (even though such copyright has been well established for years in video game cases), that there is nothing original in Apple's displays, and that Apple's method for displaying information is "common and ordinary." In its defense, Microsoft does not explain why it is so intent on emulating Apple's "common and ordinary" displays.

The judge's ruling will probably make a financial settlement between the parties more likely. The week before the ruling, Microsoft announced that the delay in shipping its new versions of Microsoft *Word* had caused an unexpected drop in earnings, and the stock market responded by plunging Microsoft's stock. The judge's ruling caused a similar but smaller plunge. It is estimated that Bill Gates has lost over \$200 million due to the two stock drops alone. Given that IBM is heavily invested in Microsoft's visual interface for both MS-DOS and OS/2, it is likely that Gates will have to deal with many pressures in the coming months and that the case may be settled without a definitive ruling. Many software companies would be sorely disappointed if the case was finished without a legal resolution, however, since the issues that Apple and Microsoft have brought up are vitally important to many other manufacturers.

Fuji And BASF Announce Disk Manufacturing Plant

With the rising popularity of 3.5" disks and the US government's protectionist moves against Japan looming, Fuji and BASF have agreed to a joint venture to manufacture disks in the US under the name of "B & F Microdisks." The two companies are building a \$50 million plant in Bedford, Massachusetts, which will begin manufacturing later this fall. When in full production, the factory will make almost 100 million disks a year.

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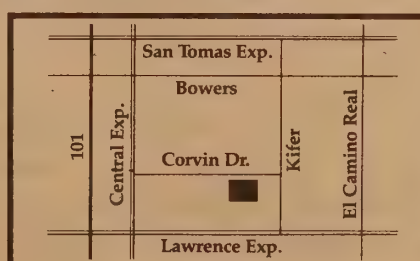
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NEWS AND ANALYSIS

Congress Gets On The Virus Bandwagon

The beginning of the Bush administration has not caused much of a feeling of harmony among the Democrats and Republicans in the US Congress. However, the recent rash of computer viruses and the concomitant publicity about them in the popular press has caused one of the first high-tech bills to have a surprising amount of bipartisan support. Introduced recently by Californians Wally Herger and Pete Stark (Republican and Democrat, respectively), HR 55 creates new criminal and civil penalties for anyone who "knowingly inserts into a program for a computer, or a computer itself, information or commands, knowing or having reason to believe that such information or commands may cause loss, expense, or risk to health or welfare." HR 55 would expand the 1986 Computer Fraud and Abuse Act to also cover viruses. The list of co-sponsors of the bill is extensive, including both the most liberal and most conservative members of Congress, and is heavily weighted with Californians.

The rhetoric associated with the bill is similar to much of the rhetoric that appeared in the computer press about a year ago, when the first microcomputer viruses became widespread. However, in a display of unfortunate misinformation, the sponsors included instances of non-virus computer security problems in their cover letter for the bill.

Fortunately, the bill itself does not go into the types of destruction that must take place in order for the virus creator or spreader to be prosecuted. Instead, it simply extends the current law to include computer viruses and, without naming them, computer worms.

With its large list of co-sponsors and no significant detractors, the bill is likely to pass easily and will most likely be signed into law. Even without the bill in place, it is probably still possible to convict previously-caught virus perpetrators under the current law. HR 55 will simply make it clearer to judges (and, one hopes, to people who create viruses) that the penalties for viruses are the same as for other malicious vandalism.

UNIX Wars: You Can't Follow The Fighters Without A Program

This year's Uniforum, the annual meeting of almost everyone in the UNIX market, showed that UNIX has not taken off. Despite the best efforts of major users and many manufacturers, the infighting among the largest vendors has significantly slowed the acceptance of UNIX into markets in which many people would love to see it move. Although there were many new machines shown running UNIX, and the cost of those machines has dropped faster than the cost of lower-powered microcomputers that run MS-DOS, business users have shown a great reluctance to accept UNIX since it is unclear which way the operating system is going.

Even with the stagnation in new markets, UNIX is still doing very well in the one market which has been its base of support for over five years: the government, particularly the military. Many parts of the government standardized on UNIX years ago, and that standardization has become a boon for the UNIX industry, with new billion-dollar contracts supporting many hardware and software vendors.

Particularly in the military, where networks of UNIX-based graphics workstations are becoming more popular, the future of UNIX has become increasingly important. Unfortunately, the big players in the UNIX market have made that future muddy.

The war between AT&T and major manufacturers was the major topic of discussion at the show. Briefly, AT&T and its supporters (in a group called UNIX International) want AT&T to have final say in how future versions of UNIX will look and act; many major manufacturers (in a group called Open Software Foundation, or OSF) want to have control themselves. However, the discussion was not going the way that either sided wanted to hear. Major users, especially in the government, refused to take sides in the argument. Since all major systems bought by the government are bought by contract, the winner of a contract might be in either UNIX International or OSF; in fact, a contract might be won by a systems house that uses computers from both sides. This, of course, worries the government buyers since it is not clear how well these computers will work with each other five or ten years from now. When all contracts were awarded to IBM running IBM-proprietary operating systems, this worry was never there.

Interestingly, IBM has been behind much of the fighting. IBM was one of the founding members of OSF and donated its operating system technology as the base for the first OSF product, which will be released late this year or early next year. Without that base and without IBM's name in its masthead, OSF would probably have never been formed.

Many people pointed out that with the endorsement of IBM, by far the world's largest computer maker, software from OSF would certainly be a dominant force in the industry. However, IBM announced after the end of the Uniforum show that it had no intention of selling the first version of the OSF software. This significantly undermines the argument that IBM's participation will make OSF

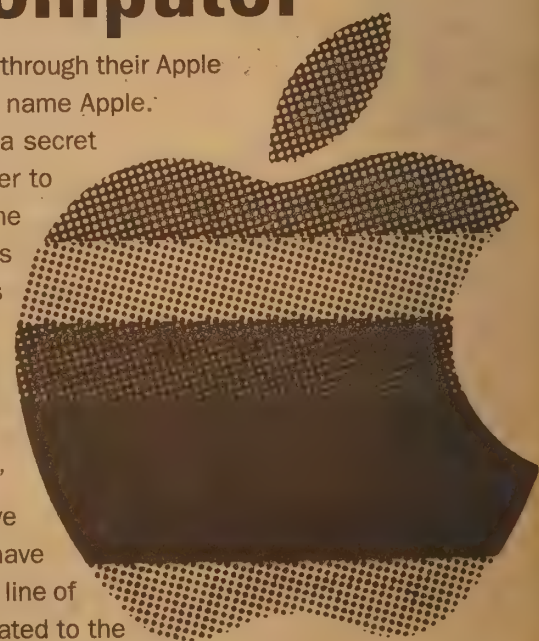
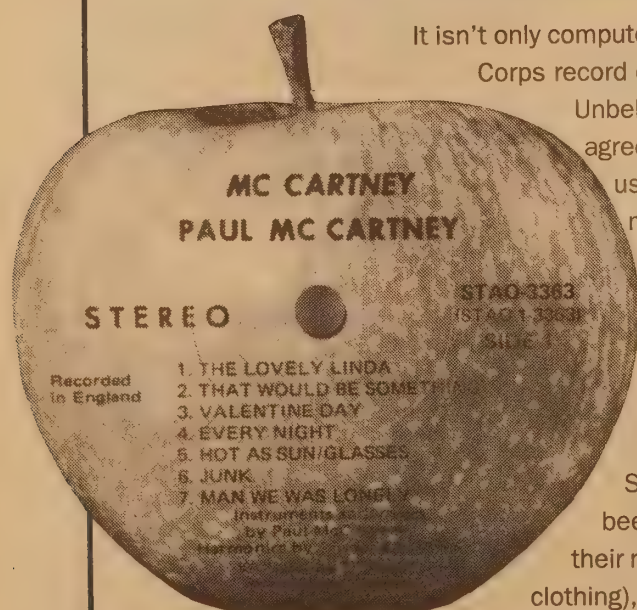
Beatles Sue Apple Computer

It isn't only computer companies suing each other any more. The Fab Four, through their Apple Corps record company, have sued Apple Computer for the use of the name Apple.

Unbeknownst to almost anyone, the two companies signed a secret agreement in 1981 that supposedly allowed Apple Computer to use the Apple name and logo as long as it did not go into the music business. Now that Apple Computer's computers are used heavily in the music business, Apple Corps is suing Apple Computer for damages and back royalties. The Beatles claim that the computers benefit from the name that the Beatles used for their record company.

The suit may seem a bit bizarre, coming from a group who's made memorable the phrase "All you need is love." Since Apple Corps and its Apple Records subsidiary have been almost inactive for the last ten years (other than to have their name on reissues of the Beatles' records and on a minor line of clothing), virtually no one thinks that Apple Computer is at all related to the Beatles. Even their logos are quite different. Apple Corps has an all-green apple and an apple slice, while Apple Computer has an apple with horizontal rainbow colors and a bite taken out of it.

The reasoning for the suit is unclear, since the surviving Beatles are still making lots of money individually and from record reissues. Interestingly, very little sentiment has come out against the Beatles for the suit, unlike what came out against Apple when it filed suit against Microsoft last year (see above).



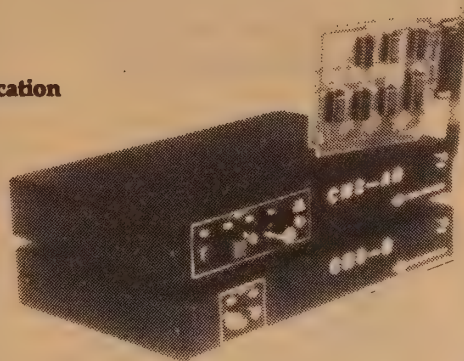


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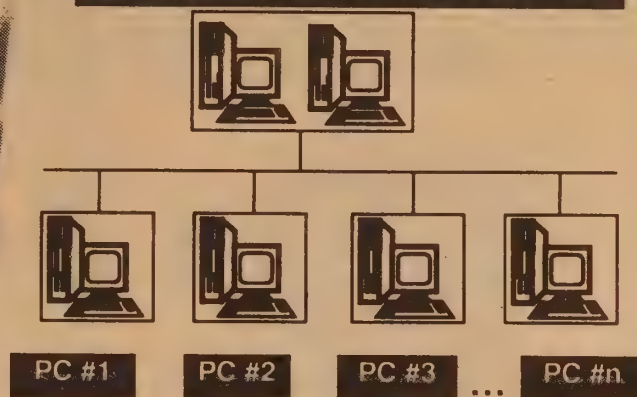
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software universal, and gives more ammunition to the people who claim that IBM is only in the UNIX market to get what it can in the short run and to keep it stagnant so that its own competing operating systems do well in the long run.

For its part, AT&T made sure that users did not worry about which type of processor would have the next AT&T version of UNIX available on it. It announced agreements with Intel (for the 80386 and 80486), Motorola (for the 88000 RISC chip), and Sun (for the SPARC RISC chip) to make it clear that all would have equal footing in the new system. This clearly hurt Sun, which had been marketing SPARC as the first to get the new system. However, it will not hurt Sun that much, because it is still receiving large contracts from AT&T for the work on the next system.

Application vendors at Uniforum noted that their business has not grown as fast as expected, except for the lucky few who have been included on the large government contracts. The reasons for this are becoming apparent: UNIX is more often used by companies who are doing their own development. Although many secretaries and managers in groups with UNIX systems have terminals on their desks, few are at all interested in using UNIX applications because they are not nearly as easy to use or powerful as many MS-DOS applications. In fact, one of the most common configurations for new UNIX systems is PCs running communications software attached to the UNIX computer. The PCs run regular PC applications and only tap into the UNIX system when necessary. Thus, although the number of UNIX users is increasing, the number of people using UNIX applications is increasing much more slowly.

Other major announcements at Uniforum:

- The Santa Cruz Operation, in a consortium with Digital Equipment, Relational Technology, Locus Computing, and Tandy announced a commercial product called Open Desktop for computers running XENIX/386. Open Desktop will compete with Sun's Open Look user interface. Open Desktop closely resembles OSF's Motif user interface and will allow programs that use Open Desktop to act like each other and to exchange information easily. The product will cost \$995, nearly as much as XENIX/386 itself, and will not be as "open" as Open Look because it is designed to run only on XENIX.

- Data General made another stab at the UNIX market with its Aviion family of low-cost workstations. The systems are based on Motorola's 88000 RISC chips and will ship soon.

- OSF's research arm announced a grant to the Free Software Foundation, a separate entity that is creating a public-domain UNIX-compatible operating system and utilities. The Free Software Foundation is best known for its GNU EMACS editor and C and C++ compilers. Although years behind schedule, the Free Software Foundation's GNU operating system could conceivably compete with AT&T's and OSF's UNIX systems, since the system will be

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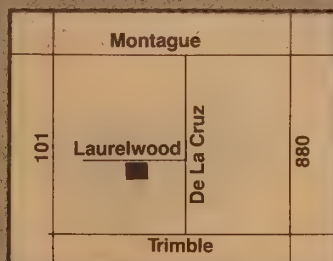
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NEWS AND ANALYSIS

more easily supported by end users because the source code will be available for free, and enhancements will come from a wide variety of sources.

Apple Releases Macintosh IICx

Moving toward smaller but more expandable systems, Apple released its Macintosh IICx as a way to keep users who need easy expandability in the Macintosh fold. The IICx has a 68030 CPU like the SE/30 and IIfx, but is much more flexible than the SE/30 and much more compact than the IIfx. It is an admission on Apple's part that its previous designs were not attracting enough new clients or giving people moving up from the lower end of the Macintosh market an easy step.

Although Apple touts the single expansion slot in the SE and SE/30, it is extremely difficult to get to. Expansion boards must be installed by dealers or technical personnel and require that the system be disassembled carefully, exposing the installer to high voltages. On the other hand, the II and IIfx are much larger systems and have many more slots than someone would normally want. When the II was designed, Apple assumed that users would want about as many slots as PC/AT users had. However, most II owners have only one or two slots filled. One slot is used for the video boards for monitors, but fewer than half the users have any need for the remaining slots. Thus, the IICx has just three slots, enough for expansion beyond the monitor but so not many as to make the box large and unwieldy. To make it even easier, you can take the modular IICx apart by removing a single screw.

Apple feels that the size of the box will be its biggest selling point. While the II and IIfx are 14.5" x 18.25", the IICx is 12.25" x 14.5". This means that it is only slightly larger than the base of a single-page monitor which can sit on top of it. The IICx can run A/UX and is already available at most Apple dealers. The suggested retail for a system with 4 Mb of RAM and an 80 Mb hard disk is \$7,069.

At the same time, Apple introduced two monitors for the Macintosh II line. The full-page and double-page monochrome displays are Apples' first entry in the growing field and are priced higher than many of their competitors. Most competing manufacturers have since dropped their prices, making Apple's monitors look even more expensive. The market for these larger monitors is important to Apple, since the flexibility of display is one of the Macintosh's strong selling points against high-end PCs. Almost all software runs just fine on all sizes of Macintosh monitors, as compared to most PC software which requires different drivers for different screens.

Businessland Loses Compaq Contract

In one of the first tests of whether large companies will buy no-name clones in large quantities, Businessland and Compaq have parted ways over a dispute about the future of the clone market. Com-

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KBRD SWITCHABLE	YES 8MHz	YES 8MHz	YES 8MHz	NO	YES 8MHz	YES 8MHz	YES 8MHz	YES 8MHz	YES 8MHz	YES 8MHz	NO
RATINGS											
Norton SI	N/A	9.8	13.7	7.7	9.8	11.2	13.7	18.4	22	22	28.5
Mips	N/A	1.21	1.7	0.96	1.21	1.4	1.7	2.2	2.66	2.65	3.36
Landmark	N/A	5.2	8.45	4.1	5.2	6.8	8.4	12.3	N/A	13.6	N/A
INTERNAL											
Memory	256K	512k	1MB	512K	512K	512K	1MB	1MB	1MB	1MB	1MB
Controller	FLOPPY	1:1	1:1	REG	REG	REG	1:1	REG	1:1	1:1	1:1
Floppy Drive	360K	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB
BIOS	AMI	AMI	AMI	AMI	AMI	AMI	AMI	AMI	AMI	AMI	PHEONIX
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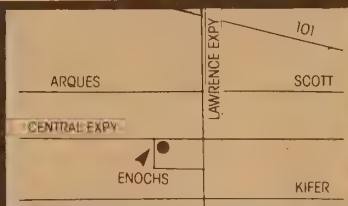
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paq has been strongly backing the EISA standard for future systems, while Computerland, also a big seller of IBM systems, has vociferously backed IBM's MicroChannel Architecture (MCA).

Businessland was one of Compaq's largest customers, accounting for over 7% of all Compaq systems sold. Businessland has the largest percentage of the corporate computer market of any computer chain, and Compaq, the compatible best known for high quality, accounted for 15% of Businessland's sales. Of course, Businessland will pick up one or more other lines of compatibles, so the loss of Compaq does not necessarily mean much of a loss of revenues. In fact, it could lead to an increase in revenues if more of Businessland's established customers decide to buy higher-priced IBM systems instead of switching to a lower-quality clone system.

The dispute is significant in that Compaq has yet to come out with an EISA clone system. By making a strong statement now about its belief in the future of the EISA standard, Compaq is committing to the technology even though end users have not had any say in whether they want it or not. According to Businessland, many customers think that they'd rather buy IBM's MCA systems (or clones, such as those from Tandy) than EISA systems because they think that the two systems will be of equal value and MCA is here today and shipping. Of course, IBM's rivals hope that the lower price on EISA systems (if they are in fact priced lower when they come out) will increase users' interest in EISA.

GRiD Systems Moves To The Storefront And Desktop

Although it is mostly known for its high-end portable computers, GRiD Systems has taken two bold moves to get a larger share of the lucrative corporate market in which it is already established. GRiD, which was bought out by Tandy a year ago, has taken over 60 computer centers that were previously Tandy computer stores. Tandy realized that it had too many stores closely spaced for the amount of business it could get, so it is converting many of them to GRiD stores. This is the first time GRiD has had anything other than local sales offices.

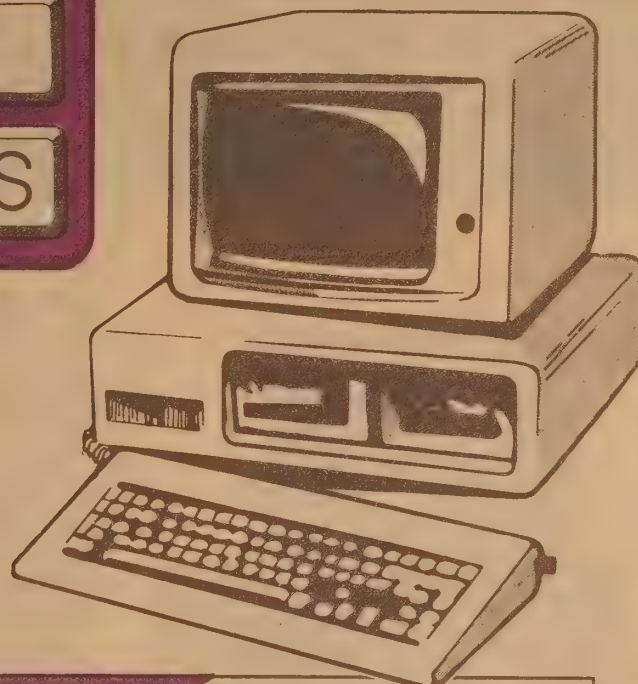
GRiD's first two desktop models are a standard AT-compatible and a 80386-based system with an MCA bus. The 386mc system has a 20 MHz CPU, 2 Mb of RAM, and five MCA slots. GRiD hopes to do better with its MCA clone than Tandy has done with its Model 5000, which has not been a big seller. Most people feel that the only people interested in non-IBM MCA system are in large corporations, where GRiD already has made many inroads. GRiD portables are considered to be the Mercedes of portable MS-DOS computers, and have garnered a large share of the higher-level management purchases of portables. If GRiD is successful with its 386mc system, it is likely that it will create many more high-end systems, maybe even ones supporting the EISA standard. ■

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Landmark = 30MHz

64K Cache Memory

8 Expansion Slots

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10MHz—0 Wait State

Landmark = 13 MHz

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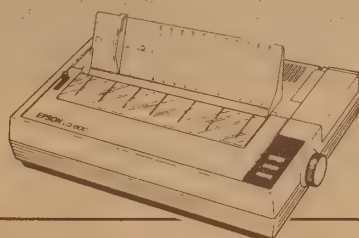
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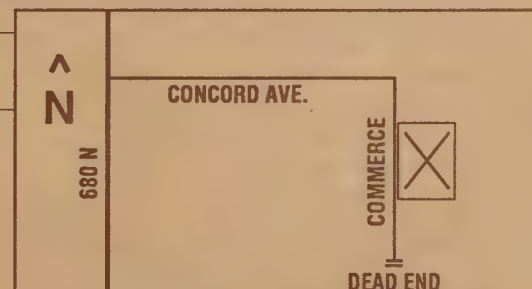
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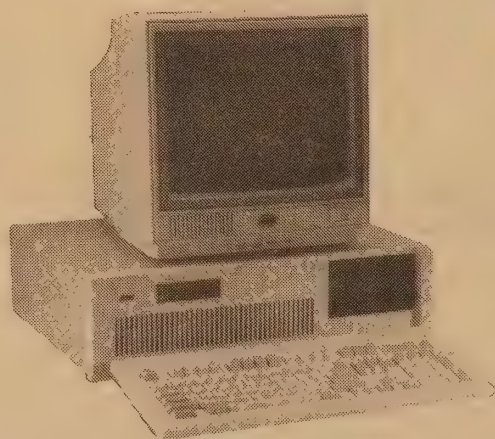


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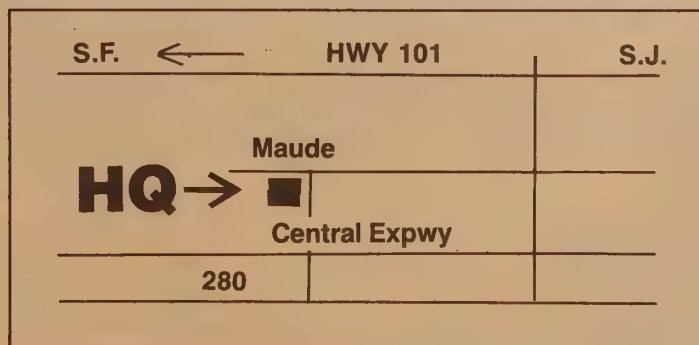
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Workgroup Augmentation: The Next Massive Micro Application

Among other things, group efforts—largely based on simple exchange of text—produced the Federalist Papers, the US Constitution, the French Revolution, and prodigious work in science and mathematics.



Copyright © 1989 by Jim Warren. All rights reserved. Jim Warren founded the West Coast Computer Faire, the Silicon Gulch Gazette and InfoWorld newspapers, Video Initiative and the DataCast proposal for broadcast-based paperless electronic newspapers utilizing personal computers. He was the founding host of the PBS Computer Chronicles series, founding editor of Dr. Dobb's Journal, and founding president of the Microcomputer Industry Trade Association.

I am becoming convinced that one of the most significant applications of personal computers, developed between now and the 21st Century, will be computer augmentation of group processes. It is sometimes known as—and often hyped as—“groupware.”

If it can be developed to its apparent potential, it can support much better decisions and designs consuming much less time, resources and people.

In some ways, computer-assisted group efforts can return to the invaluable collegiality that existed from the 17th through the early 20th centuries. Then, dialogue was vigorous and enormously productive—and much of it was conducted by correspondence.

Among other things, group efforts of that time—largely based on simple exchange of text—produced the *Federalist Papers*, the US Constitution, the French Revolution, and prodigious work in science and mathematics.

(This article is the first of what I expect will be an ongoing commentary on this important computer application.)

Group Processes—The Application Environment

Perhaps the most common—and most significant—thing people do is work in groups to achieve a common goal. It can be as minor as carpooling kids to school or as earthshaking as developing a viable global nuclear policy.

Some of the common requirements for group processes include compromise, time constraints, information exchange, dialogue and debate shared by participants and by others, coordinating progress and work, subgroups assigned detailed subtasks, and decisions by consensus or vote or dictate.

With considerable effort and some luck, group processes actually produce results or accomplishments—that may or may not be desirable, or even tolerable.

“A camel is a horse designed by committee” has the ring of reality for most folks who have participated in group decision processes.

Group Problems Amenable To Computer Assistance

Group processes also commonly include misplaced and misrecorded information, inadequate recording and sharing of valuable dialogue, debate that is ill-reasoned and fractious, decisions that are emotional rather than rational, and interaction that is harmfully burdened with ego and manipulation, covert and overt.

Commonly, results are far less than optimal, and sometimes irrevocably disastrous. They must often

be extensively reworked by new groups, and those new groups often have little or no access to significant information and decision bases developed by the previous group.

“Re-inventing the wheel” is a common group process.

An Environment for Augmented Group Processes

Gadgets first: Personal computers provide individuals with ample power for information storage, structuring, interconnecting, and retrieval—tools essential in any rational decision process.

Communication between personal computers facilitates rapid exchange and sharing of information and dialogue in highly-useful, machine-readable form. Remember how much was accomplished by slow correspondence before the time of telephones and rapid transportation.

Communications between PC-equipped group members can include voice monologue or dialogue as voice-mail—that can also annotate text. Complete text, graphic, voice and pictorial information can be efficiently stored, scanned, searched, annotated and shared.

And networked PCs can provide the delay sometimes needed for exchanges that are more productive by being more diplomatic and less abrasive. Ill-considered comments have damaged more than one group effort.

Also, such delays allow the time essential to reasoned decision-making. Too often, important decisions are poorly made, due to time-limited, emotion-laden, ego-ridden face-to-face group processes or too-“easy” phone conversations.

You can begin to see the possibilities. Look over the preceding lists of some of the characteristics and problems of group processes. See how communicating PCs can be applied. The opportunity for group-augmentation software products is wide open, and it's not going to close for years!

And, The Important Component...

Of course, there is a major stumbling block: People involved in significant group decision processes must accept and be able to use computers. What's worse, they must be willing to forgo manipulative, emotion-laden, irrational decisions. Congress? Legislatures? Corporate moguls?

Perhaps groupware will be the 21st Century Equalizer—with computer-literate bit-slingers replacing 19th Century gun-slingers, cooperating in group processes that are based on adequate information and rational—rather than emotional—decision processes. It can be an egalitarian deposing of kingmakers and manipulators, continuing our slow

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Customer Profile

Danny Goodman

Age: 30 something.
It's hard to tell on guys with beards.

Profession: Author of the all-time best selling book, *The Complete HyperCard Handbook*, and more recently *Danny Goodman's HyperCard Developer's Guide*; software developer (*Business Class* and *Focal Point II*). Described as a genuine "Renaissance Man"!

Hobbies: His idea of a good time is to scan the comprehensive quotes of the great Serbo-Croatian poets while enjoying a good glass of Chenin Blanc. Napa Valley, of course. He prefers non-computer keyboards, like the one on his Bechstein grand piano. A compulsive researcher!

His Page Recognition Software:

OmniPage, of course. According to Danny: "In preparing a book, or working on a special project, I need to get at information quickly to avoid disturbing my work flow. With OmniPage, I can scan virtually any font, or font size, in any column format, and easily place it into an existing file. I'm building a library of articles, relevant to my work, on a variety of subjects."

Favorite Quote: From the *New York Times*: "OmniPage has the potential to do for scanners what the *Lotus 1-2-3* spreadsheet did for the sale of PC's."

Things Disliked Most: "Neil Simon plays done by actors from California and guys who claim to have met with beings from other planets. Most of whom also happen to come from California. No seriously, what upsets me most is some of the over-promising in this industry, especially when it comes to page recognition software."

Favorite Scan: "I'm working on a library of articles from magazines and professional journals. You might call it the ultimate scan. I want to develop a HyperCard front end, and tie it all back to *Focal Point II*, which is really the center of my computing universe."

Future of Page Recognition: "I hate to type, that's why I develop HyperCard products that type for themselves. OmniPage helps to eliminate excessive key strokes. I can relate to that. How else does my publisher expect me to get a book out in a matter of months? Being able to cut and paste between vast libraries of data, extrapolating ideas, is the very essence of page recognition. With OmniPage's versatility we're not just managing pages any longer, but entire blocks of thought. It's a product that delivers on the promise of the future—finally."

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(And, with an appropriate group's Bill of Rights, it may even avoid democracy's great danger—tyranny of the majority.)

Addendum: Computer-Accessible Government

It seems particularly applicable to the preceding context that the City of Santa Monica has just activated a public-access computer network. Residents can now access information on everything from parking permits to library catalogs, all available via their personal computer and telephone.

Equally important, it allows questions, suggestions and complaints to be filed with city hall—in a form less likely to be “lost” than a phone call—and city officials have promised to respond, right to the originator's PC.

Santa Monica certainly isn't the first agency to initiate such a system (but it's an example on which I have convenient information—an article from the *Los Angeles Times*, reprinted in the 2/21/89 *San Francisco Chronicle*).

Warranties: Required Expense Or Consumer Option?

Frothing at the mouth over society's miniscule imperfections, let us consider a fantasy that is not realizable—“free” warranties:

Preying on the something-for-nothing syndrome of naive consumers, promoters con them into pay-

People involved in significant group decision processes must accept and be able to use computers. What's worse, they must be willing to forgo manipulative, emotion-laden, irrational decisions.

ing for product insurance they may not want to buy. Watch for this to expand in the computer world, as customers demand more and more protection from the future—for “free,” of course.

Axiom: Companies do not offer something for nothing—someone always pays. Call this the “Conservation of Stuff” Law—a logical extension of Conservation of Matter and Conservation of Energy. With companies hoping to remain in business, it is their customers who pay for “free” products and services. (The same is true of “free” government services, but that's another sermon.)

Consider some auto makers' “standard” 5/50 or 7/70—7-year/70,000-mile warranties—or even the old 12/12 and 2/24 warranties. Do you really think they're free? Do you really think the price of such insurance (call it a warranty if you wish) isn't built into the price of the car? Do you really think a safety margin favoring the manufacturer isn't also added into that “basic” price?

Personally, I prefer product prices to be minimal, with such “required insurance,” mandatory coverages and hidden costs being just sufficient to cover manufacturers' defects (yes, the consumer also pays those costs). Then, give the consumer the up-front option of purchasing more coverage or protection for its identified fee.

Let's limit “free” [required] warranties! Support options for individuals. (Clip and forward to your favorite manufacturers.)

Share Where

Send suggestions to Jim Warren, Realizable Fantasies, 345 Swett Road, Woodside, CA 94062. Published proposals will be attributed to their authors unless anonymity is requested. ■

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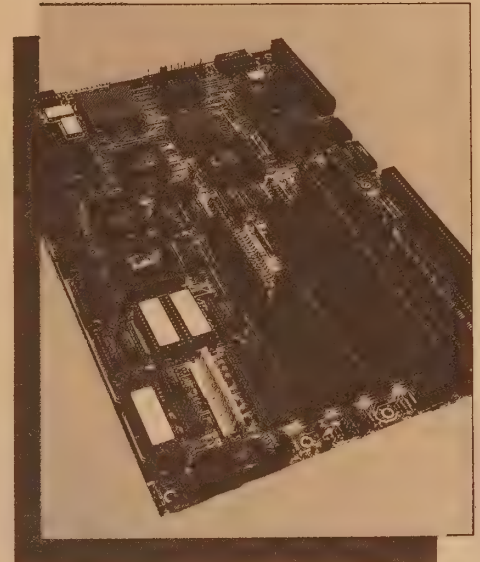
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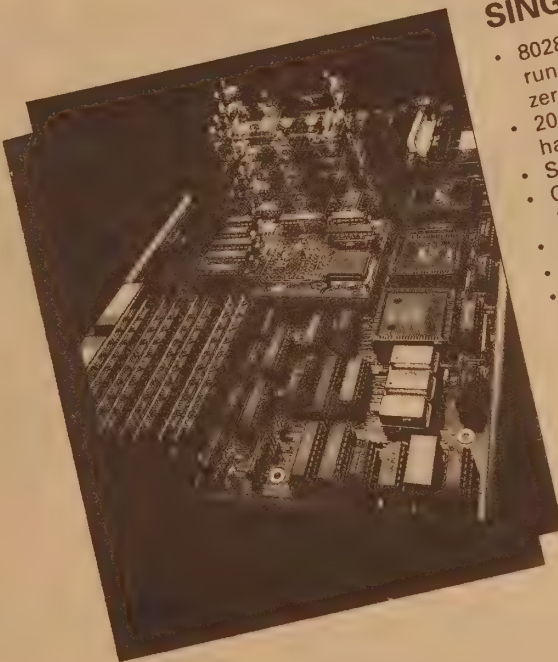
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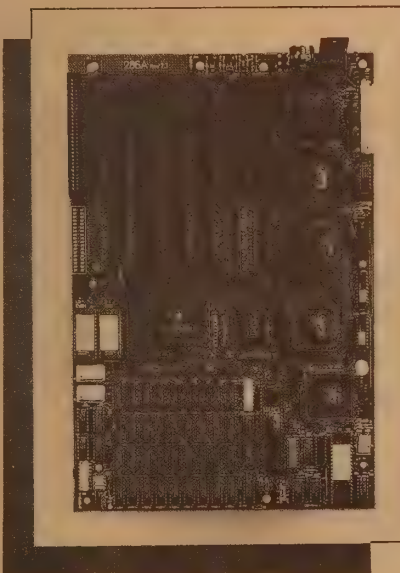
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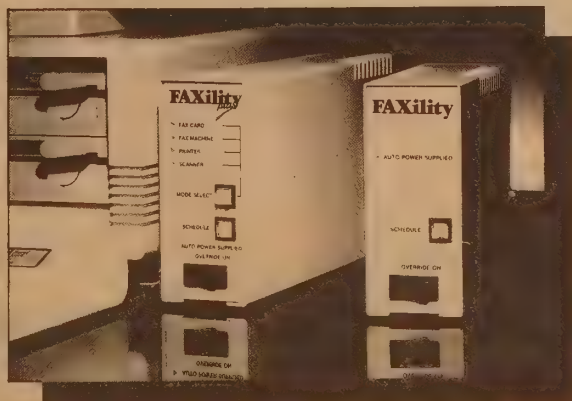
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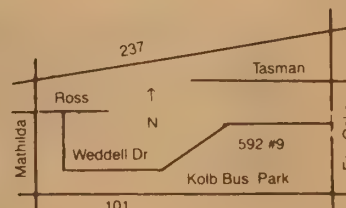
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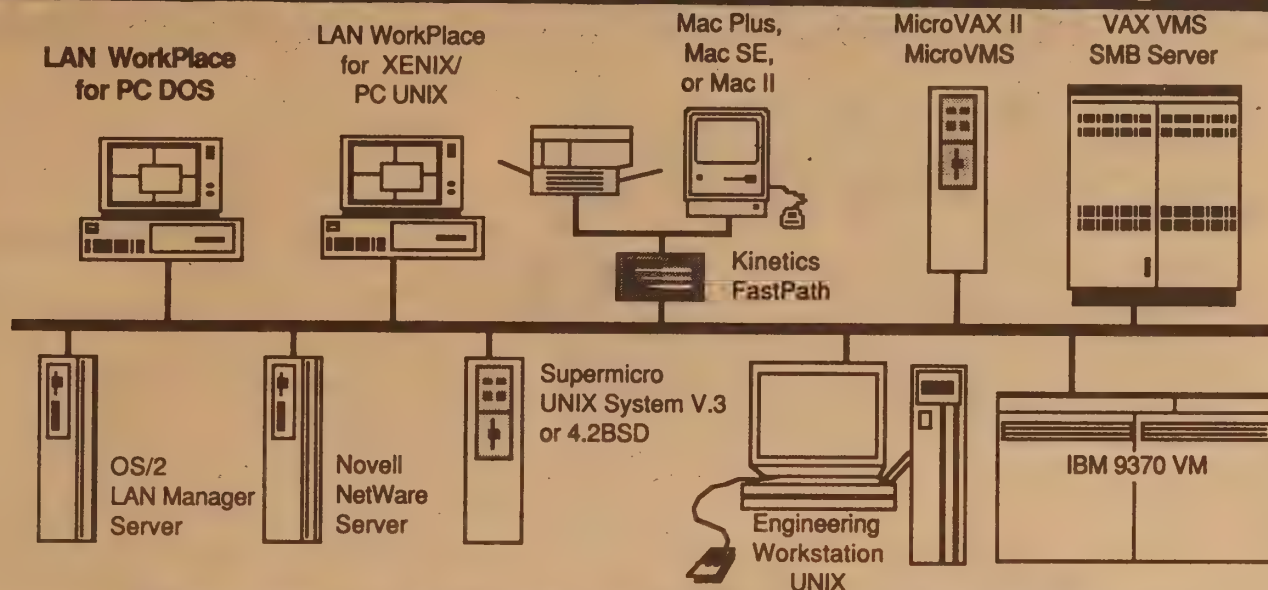
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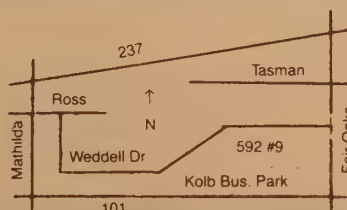
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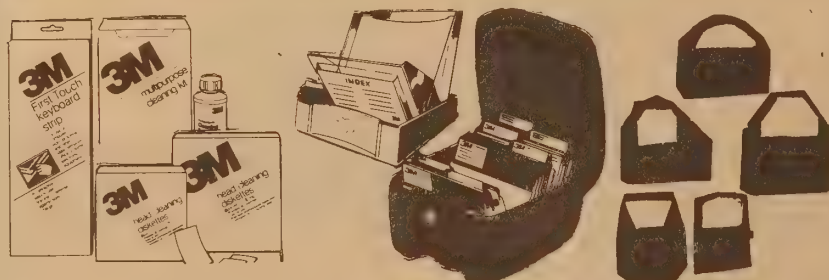
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GUEST EDITORIAL • BY DAVE FREEMAN

Tips For The Mail Order Buyer

An increasing number of end-users are buying computer equipment by mail order. Some experts, such as Future Computing, say that up to \$3 billion a year is spent on hardware and software bought from direct marketers.

Not everyone buys mail order. Some knowledgeable users are attracted to the low prices and convenience of shopping from their desk. But others like to "kick the tires" and test drive a system before they buy.

For consumers who want to buy hardware and software by mail, here are 12 Dos and Don'ts.

1. Try to determine exactly what you want your purchases to accomplish—increase processing speed, memory capacity, etc. That will help you ask the right questions of the mail order reseller.

2. Be as knowledgeable as possible about the equipment you buy. The more you know about your system, its configuration and compatibilities, the better you'll be able to choose the right products to enhance it.

3. Compare prices and products by checking ads in the major computer publications.

4. What support does the reseller offer? Some direct marketers have technical and service facilities comparable to those of many retailers.

5. Ask sellers what their policies are on shipping costs, returns, and warranties.

6. Most shoppers don't want their credit cards charged before merchandise is shipped. Check with resellers about their policy.

7. Ask if cables or other accessories are required to use the product you're buying. Nothing is more frustrating than to receive your merchandise and then find out you need a cable, soft-

"Try to determine exactly what you want your purchases to accomplish— increase processing speed, memory capacity, etc. That will help you ask the right questions of the mail order reseller."

ware, or whatever to use it.

8. Be patient about resellers' rules for credit card use. (E.g., some resellers will ship only to the address listed under the credit card account.) They protect you too. Cutting fraud will help these companies stay in business to serve you. If they go bankrupt, everybody loses.

9. Try your new equipment or software immediately. You'll have an easier time returning something if you are prompt in responding.

10. Save all packing and shipping materials. You'll need them if you must return something.

11. Be patient when phoning customer service reps. They may not have all the answers, but most will try their best to find out for you.

12. Buy from a reseller who displays a membership from a recognized direct marketers' national trade association (e.g., Direct Marketing Association, Microcomputer Marketing Council, etc.) They're dedicated to professional ethical standards and to helping you, the consumer, be a wise mail-order shopper. ■

Dave Freeman is founder and chairman of Advanced Computer Products, the Santa Ana-based reseller which recently marked its twelfth year of direct marketing. He is also communications chair for the Micro Marketing Council, a newly formed trade organization for direct marketers of computer equipment.



OPTIMA AX20386**\$1999.00 System****Standard Features:**

- Intel 80386 running at 20 mhz 0 wait state
- Socket for 20 mhz Intel 80387
- 1 MB RAM expandable to 8 MB on board
- Page mode interleave memory architecture
- 50 MB 35 ms Hard Drive
- 5.25" 1.2 MB floppy drive
- 2 serial / 2 parallel ports
- 12" amber monitor with tilt & swivel
- Monographics video card
- Dual floppy and 1:1 interleave hard disk controller
- Enhanced tactile 101-key keyboard
- Eight expansion slots
- Case with turbo and reset buttons and power, turbo, and drive LEDs
- One year parts and labor warranty
- SI Rating: 21

OPTIMA AX12286**\$999.00 System****Standard Features:**

- Intel 80286 running at 12 mhz 0 wait state
- Socket for 12 mhz Intel 80287
- 512 KB RAM expandable to 4 MB on board
- Built-in onboard LIM 4.0 support for memory above 1 MB
- 20 MB Seagate ST225 drive
- 5.25" 1.2 MB floppy drive
- 12" amber monitor with tilt & swivel
- Monographics video card with parallel port
- Dual floppy and hard disk controller
- Enhanced 101-key keyboard
- Eight expansion slots
- Slide-in case with turbo and reset buttons and power, turbo, and drive LEDs
- One year parts and labor warranty
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\$1999 FOR A 386 20 MHZ 0 WS SYSTEM W/ 50 MB DRIVE?

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mark-up. And, no six digit advertising costs to add on.

"Inferior Parts" was their next excuse. Until they found out most of our

puter Store, we use a different approach. We build computers and provide services that keep our customers satisfied and raving about us. And our customers do.

They not only come back to us, they also refer their friends.

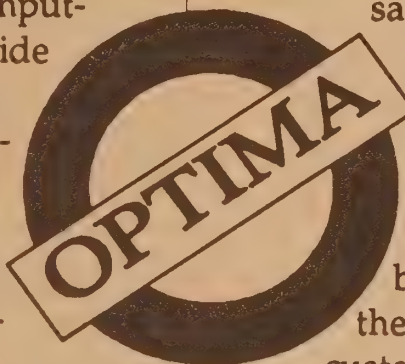
Reliability and support aside, what brings new customers to us in the first place is pricing.

"Impossible." Our competitors said about our pricing. For them, not for us. Unlike them, we sell our own computers direct. From us to you. No distributor

suppliers are also their suppliers and the stuff we use are the same they use.

So what's our secret? We hate to disappoint you but we don't have any. We simply build computers the way we build customer relationships

- to last. We do keep our overhead low. Meaning, no fanciful ads, no designer-decorated stores, no ad agency designed ads, and most importantly, no artificially bloated prices. In short, simply the most for your money. And something for you to rave about.



\$999 FOR A 286 12 MHZ 0 WS SYSTEM W/ 20 MB DRIVE. SIMPLY THE MOST FOR YOUR MONEY.

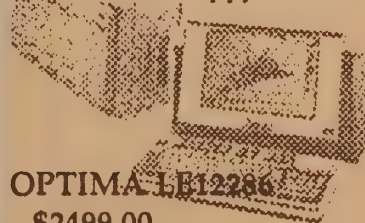
Unlike the big guys, we don't waste money on fancy advertising that costs a small fortune. After all, aside from impressing you, glossy ads and color pictures are meaningless. They don't make a computer any more reliable or easier to use than high prices would. But that is what you'd pay for when you buy from the guys with expensive ads. At The Com-

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**OPTIMA LE12286****\$2499.00**

- 12 mhz 286 CPU
- 640K RAM expandable to 4 MB on board

OPTIMA LE20386**\$2999.00**

- 20 mhz 386 CPU
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Novell ELS Level II Version 2.12	795
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Word Perfect Network Station	69

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- 80386 CPU at 16MHz: 80387 coprocessor.
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- Weighs just 10.9 pounds.
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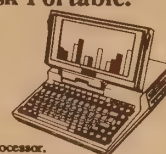
T1200H \$2149

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T3200



- 80286 microprocessor with a 80287 coprocessor.
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In A 12.8 Pound Portable.**



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- Weighs only 12.8 pounds.

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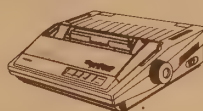
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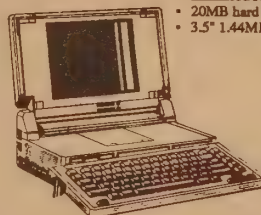
ExpressWriter311

- The letter quality printer for people on the move.
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- Easily transportable; convenient retractable handle and weighs just 11 pounds.

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Model 20**

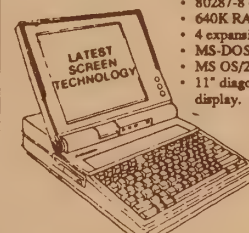


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- 640K RAM.
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- 3.5" 1.44MB disk drive.

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MP 286L



- 12MHz 80286.
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Computer and information lovers have this weird dream of *total connectivity*—getting on your PC at one end of a network, and being able to communicate with people and work on files on any other machine—without having to worry about whether they're running DOS or VMS or UNIX, and without having to worry about translating protocols, or stripping linefeeds out of a text file.

It's like a hacker's analog to that old Coke commercial, where everyone's holding hands on top of a hill chanting, "I'd like to teach the world to sing..."—something along the lines of universal computing peace and happiness. A silly analogy, perhaps, but if you think about it, it's really not so bizarre. The computers, after all, are on a network. Why should you be limited to sending email to similar machines and accessing data files through a server? Why should I have to go through the trouble of copying and converting a PC file, just so I can read it on my Mac?

The Oracle Corporation, located in Belmont, has made at least a piece of this dream a reality. In the process it's garnered critical acclaim and fabulous profits. Oracle Corporation makes the *Oracle* database manager, a SQL-based relational DBMS which runs on an incredible array of machines and operating systems. As Sun has done with the "open architecture" theme, Oracle has elevated the concepts of "portability" and "compatibility" to the level of religion. Not only will *Oracle* run on machines by the likes of Sun, IBM, Apollo and H-P, but on many less mainstream computers, e.g. Dansk Data and Bolt, Beranek and Newman. And *Oracle* runs under every flavor of UNIX imaginable. Says CEO Larry Ellison, "Oracle is notoriously promiscuous."

This egalitarian approach to computing has not only earned Oracle its users' goodwill, but has made it the

undisputed market leader as well. This has translated into the kinds of profits that make most software firms glassy-eyed. Founded in 1977, Oracle has at least doubled its revenues in 11 of its 12 years, showing an impressive \$282 million in sales for its 1988 fiscal year. The latest quarter's sales of \$123 million made Oracle the third-largest independent software company in the world.

Oracle's commitment to portability not only gives it the ability to sell software to many different companies, but allows the program to act as an "operating systems integrator" as well. In a sense, the program can be thought of as an operating environment on top of which applications can be written to access enterprise-wide data. Because the program maintains file compatibility across different operating systems, heterogeneous computers on a network can share and access common databases. Thus, a Macintosh could modify data resident on an IBM mainframe, as

long as both are on the same network. This capability was enhanced by Oracle's 1986 release of *SQL*Star*—software which can transparently bind together all of a company's distributed databases into a single logical database, making it appear from any machine as if all data is resident in one file.

Oracle has also released a number of microcomputer versions of its database, including DOS and OS/2 versions, as well as *Oracle For Macintosh*, which has a *HyperCard* front end. They also developed a popular *Lotus 1-2-3* add-in program that gives access to distributed *Oracle* databases from within *1-2-3*. Oracle seems committed to the belief that people should be able to use any popular program as a front end for its software, and we can expect to see the database interfacing to many other microcomputer programs in the future. Once you buy the "chassis and engine," Oracle thinks you should have your choice of body style. In

fact, it's likely that Borland and Ashton-Tate will release future versions of *Paradox* and *dBASE* that talk to *Oracle*.

During the past year Oracle has begun to broaden its product line. In December it announced the formation of the Oracle Office Automation Division, a group that will market a series of software products to manage information on an enterprise-wide basis. Their programs will take advantage of *Oracle*'s ability to communicate among different computer systems—a capability which is obviously valuable to many applications besides just databases. The group's first offering, *Oracle*Mail*, lets users send email between any two computers on a network, regardless of their types or operating system. Oracle has also released a series of financial applications packages, and a set of CASE tools designed to help create sophisticated database applications.

With this kind of momentum, *Oracle* is obviously on a roll. We talked

The Master Plan From Oracle

Founder/CEO Larry Ellison On The World's Third-Largest Software Company

By Steve Guttman and Mary Eisenhart

PHOTO: MICHAEL JAY

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"We just believe if it's better for the end user, then eventually it's going to be better for us. Users should be able to choose the front ends they want...They can use any interface they want with our database."



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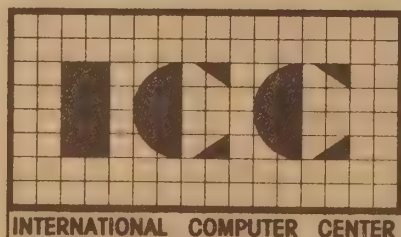
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with CEO and co-founder Larry Ellison at the company's headquarters in the Belmont hills.

How did you come to found the company, and what needs were you trying to address?

I'd started out my first job at Amdahl. Basically I started bumming around Silicon Valley. Eventually I was VP of R&D at a couple of startup firms [who eventually went out of business], and I felt that if I was working for firms that went out of business, I really didn't need leadership to do this—I could do this all on my own. So I decided to find some way to found my own firm.

That was in 1977, and at that time you didn't go out and get venture capital for software firms because venture capitalists didn't invest in software. They only invested in things you could see, feel, or touch. So we put in \$2000 of our own money and formed the company, and signed our first contract the day we opened our doors. We've been profitable ever since. We will finish our twelfth year in May, and we will have been profitable in every one of our 12 years—with no outside money whatsoever until we went public, which was in March 1986.

We started as a software company in the database business—the database management system business. We commercially pioneered relational database management systems. We released the very first commercial relational DBMS in June of 1979—sold to the intelligence community and contractors of the federal government.

How did you happen to get onto the relational bandwagon?

Well, there wasn't a bandwagon. There was no band—there wasn't a wagon either. There was a series of papers being written in the early and mid-1970s, primarily by people at IBM Research, which culminated in a November 1976 paper called, "SQL2: A Relational Database Management

System." And we used that and its preceding papers from IBM Research as a blueprint for the development of Oracle.

We watched the development of relational database management system technology, and decided to stand on the shoulders of giants, and see if we couldn't beat IBM to the marketplace with their own ideas and own technology. We did that. We released the first commercial relational DBMS in June of 1979, and IBM didn't have its first relational system until February of 1982. So we were more than 2 1/2 years ahead of IBM to the marketplace with this technology which they invented in 1969/1970.

So we had the first commercial relational DBMS; we had the first DBMS based on the SQL language (which is the industry standard); we had the first portable relational DBMS based on the SQL language; we had the first distributed relational DBMS; we had the first fault-tolerant relational DBMS; we had the first OLTP-transaction processing relational DBMS. We have led the development of this technology from the start of the business in 1977 to the present in 1989. And that technology leadership has, in turn, made us the market leader. We are, by far and away, the leading supplier of relational database management systems in the world. We have a 47% worldwide market share—IBM has 25%. And IBM is second. So, we are almost twice as large as IBM, and all of our competitors...we are almost larger than all our competitors combined if you include IBM. If you take IBM out, we are twice as large as all our other competitors combined. So if you add up Relational Technology and Informix and everybody else—if you add those all together, we are twice as large as all of them combined.

We are coming mostly from the microcomputer world, where SQL is really just starting to raise its head. What are the advantages of that over dBASE, or any of the other lan-

guages?

Oh, dBASE—this is going to sound funny, but dBASE is not really a database management system in the conventional sense. A database management system is something that manages shared data—dBASE doesn't do that.

dBASE is a personal database management system designed for the era when personal computers were indeed personal computers. A personal computer is something that stood on your desk and had no wires coming out of the back other than the power cord. You know, you didn't share it with anybody. And it had all your personal data—your personal spreadsheets and personal files—all that stuff. You made personal decisions as to what software ran on your computer.

Well, those days are changing. Because personal computers are becoming networked to other computers—other personal computers, UNIX based servers, minicomputer servers, even mainframes. And as

ming language than it is a database manager. In the mainframe computer world, we think the primary objective of a DBMS is to allow multiple applications and users to share data—that's the real reason for a DBMS.

So that was the vision when you started your SQL implementation?

Absolutely, that was true of all DBMSes. PCs were interesting because PCs had their own notion of what a DBMS was, which was very different than the notion we were familiar with in the mainframe world. It was nonsensical to talk about sharing data on a PC DBMS when it's a single-user computer. So, what was a PC DBMS anyway if a DBMS was defined as something that allows you to share data?

As it turns out, as a programming language, dBASE was better than BASIC for building applications. And that's what it's really for. So you've got this programming language—what we call a 4GL, or fourth

"I think the Mac is a sensational computer. I've used Macs and I've used PCs and I think Macs are dramatically better computers than PCs in terms of what they can do. But a lot of large organizations still won't look at Macs because they've standardized on IBM PCs. I'm always amazed at how many people just haven't seen one."

you start to network personal computers among themselves or to other computers, you need to share data. You need a DBMS that's designed to allow you to share data. And dBASE was never designed for that.

So you have to graduate to something different, and right now, the best language—the best system for doing that is a relational DBMS. And the standard language for relational DBMSes is the SQL language. If you want to share data among a bunch of networked computers, the way you do it is with SQL and a relational DBMS. dBASE is really coming from the era of standalone personal computers, where it was a terrific tool. Now, people will still use dBASE—which is really more of a program-

generation language—you've got this programming language that's good for helping you build screens and accessing files and all of these things. It's good for building application programs—it is primarily a programming language. What's going to happen to dBASE is that dBASE will become a programming language that interfaces to SQL databases, and it's doing that right now.

You touched on something that's kind of important—when people from our world deal with people from your world, some of the same words are used to mean entirely different things. I was reading one of your reports and you use the word "distributed" quite a lot, and when

"I don't think people realize how much better Macs are than PCs. And the thing that's bad for Apple is their time, their differentiation is running out. PCs are improving now, faster than Macs are improving. 'Cause PCs have such a long way to improve."

micro people use "distributed" they mean something like TOPS where you might have some files on this guy's machine and some files on this guy's machine, and all that. And I think you mean something entirely different from that.

Well, "distributed" is a general term. You can have distributed files, distributed processing and distributed databases. And those are all completely different things. So you have to finish "distributed"—add a suffix to that to see what it is that's "distributed." The notion of "distributed" is like a transparent distributed file system. You have a transparent distributed file system that's creating an illusion, where you have files on your PC that really aren't there—those files are really located on a server, a Novell server or something. You think that your B: disk is sitting in your little chassis that's underneath your screen—it's not. It's remote—on the network. And that's all transparent. That illusion is created by the software.

So there are transparent distributed file systems; there are transparent distributed database management systems. And that means that what we do through a network of different computers—that all have different data elements—is that any one person is under the impression, that all the data they're authorized to see is local on their PC, or local on their VAX machine—even though that's a fiction, that's an illusion created by the software. It's really "distributed" throughout the network of computers.

What we mean when we talk about a distributed database, it means having a bunch of different computers, that all contain database data. And the software makes it seem, to every individual user, that that data is local and in a single database.

How do you handle record integrity—like if you've got three people working on the same file at once?

Oh, that's the classic database

problem—that's why databases were invented. Databases were invented to allow people to share data at very low levels of granularity.

Let's say I have an employee table with employee data and I want to give Charlie a 10% raise. I think that Charlie is sitting there on my A: disk, but actually Charlie is located in New York on a VAX VMS computer. Not only is he not on my PC, but he's not on any PC. And not only is Charlie not on my computer, but he's not on any computer in the state I'm in. It's on another computer halfway across the country.

So first the DBMS must figure out whether it needs to get a dictionary—to figure out where this data is, and that's called "location transparency." It has to find the data, and it will find out that Charlie's on a VAX computer in New York. That's all got to be totally transparent to the user of the application program. That's the data manager's job—the distributed data manager's job. That's what it's supposed to do.

Not only that—I'm trying to give Charlie a 10% raise, but I want to make sure no one else can access the record while I'm working on it. In the computer that's managing Charlie's record I've got to put a little note to lock the record and ensure that no one alters that record, because there's someone here in Chicago who wants the same record. You keep that lock on that record until I'm finished using it. The data manager's responsible for always locking, unlocking and concurrency-control management. It just has to make sure that if I'm updating, you can't be simultaneously updating that same record.

Now what's interesting is that, at what level—at what granularity are things locked? Some people lock at the table level, so if I'm updating Charlie, that means that no one else can give any employee a raise. If I'm looking at a record in the file, and changing a record in the file, that whole file is unavailable to other users. So when a distributed file sys-

tem does locking on a file, if I'm changing the file, no one else can change the file. Even if it's just one character in one word in this very large file—that whole file—all the data's unavailable to other users.

A data manager has a different level of granularity. A data manager, in the case of Oracle, will lock just the individual record—just Charlie's personal record. Other people throughout the network can be accessing and changing data about all of the other kinds of employees. It's just Charlie that's unavailable. So one advantage of a database over a file system, is that a database has what we call a finer level of granularity—it's better at sharing data than a file system. Another advantage is that it's structured so that it can return questions like "give me the average salary of all employees." Of course, if you ask that of a file system, it wouldn't know you had employees. It wouldn't know anything about the data inside the file; it's just there.

Borland's Paradox is one of your ISVs (Independent Software Ven-

pete with Paradox. We have this thing called *SQL*Forms* and *SQL*Report Writer* that create input forms and help people out. So we do have a set of tools that sit on top of Oracle that do compete directly with dBASE and with Paradox. We compete with SQL Server by Microsoft [and Ashton-Tate], but not with dBASE. Just like you don't think of dBASE as competing with SQL Server, you can't think of dBASE as competing with Oracle.

In essence, the microcomputer versions of Oracle are used to talk to the big machines running Oracle...

Well, not just to big machines, but to other PCs. The network can just be a network of PCs, it doesn't have to have any big machines.

With regard to Oracle for Macintosh, how did you happen to choose a HyperCard-based interface to that?

We believe in open systems. We really do. I mean we have Oracle, for example, as a back end; the Oracle database talks to DB2 in terms of data storage. We believe you should be

"People think that memory is going to curb Presentation Manager's impact in corporate America these days—it's irrelevant. Because if you look at how much the person who's using the machine costs, you pay \$100,000 per person. And you get 1200 bucks to make that person dramatically more effective by getting them Presentation Manager—it's a no-brainer."

dors). One would think it would be competing with Oracle-PC.

Oracle, again, is a true multiuser database server. And Paradox is a fourth generation language, very much like dBASE is a fourth generation language. dBASE will have an interface—Ashton-Tate has also joined our ISV program. And since we have a dominant market share in this business, we expect that dBASE, Paradox, and everyone else who provides fourth generation development tools will be interfacing their products to Oracle.

We have other products that com-

free to choose whatever data manager you want, and right now there are two dominant data managers in the world: IBM's DB2 and Oracle. We have a 47% market share and they have 25% market share. Between that we have 3/4 of the market. It would be silly for us not to recognize that market penetration.

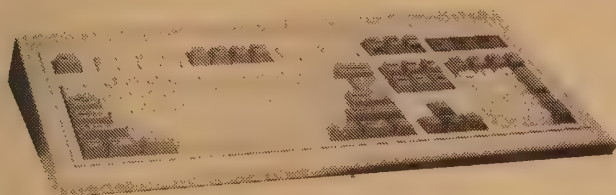
We have a very important product called *SQL*Connect To DB2* which allows you, when you're sitting on a PC with an Oracle database, to not only get access to data from Oracle anyplace on the network, but access to data in DB2 anyplace on the net-

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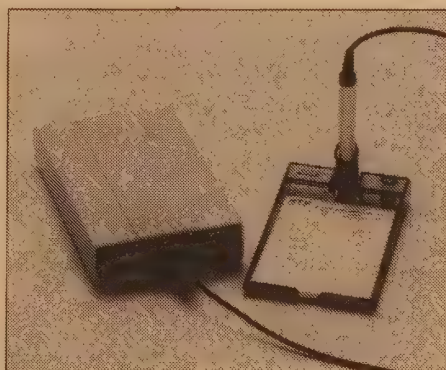
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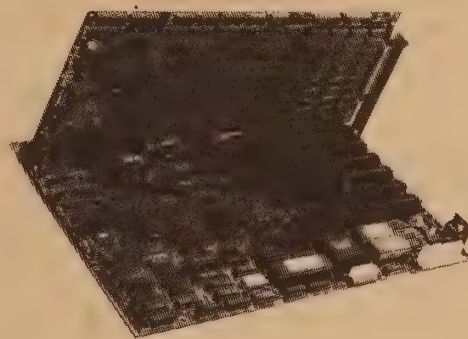


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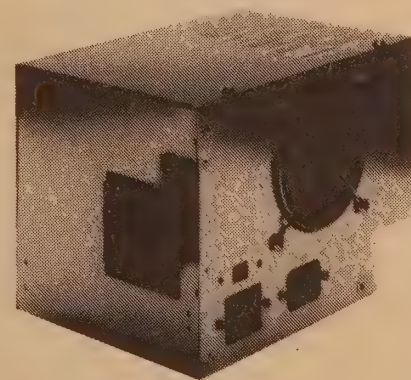
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work. So that record about Charlie which was in New York in an *Oracle* database on a VAX could have been in a *DB2* database on an IBM mainframe.

We're open from the point of view of data storage/data management, and we're open from the point of view of friendliness—the *HyperCard* interface is a terrific user interface. Very high quality interfaces can be built in *HyperCard*. Because it's very high technology and people want to use it, they should be able to use it with *Oracle*. So we built the interface.

We have an interface with *Lotus 1-2-3*. We encouraged Borland to build a *Paradox* interface. And we just believe if it's better for the end user, then eventually it's going to be better for us. Users should be able to choose the front ends they want; if they want *Paradox*, or if they want *1-2-3*, or if they want *HyperCard*, they are free to do that. They can use any interface they want with our database.

You doubled in revenue over the past year.

We doubled in revenue 11 of our 12 years.

Is the market growing that fast, or is someone losing out there?

Well, since we are almost half of our market, the market's got to be growing pretty fast; we're growing pretty fast. But we are growing faster than the aggregate growth rate of the market, so we are definitely taking market share from our competitors. So if you look at our growth rate versus Informix or Relational Technology, you'll see their growth receding. They're losing market share.

What do you attribute that to?

Well, rather than just saying, "we have a better technology," I don't think even they would dispute that we're portable and they are not. We run on everything from very small PCs that fit in a briefcase, and Macintoshes, all the way up to the largest water-cooled IBM mainframe. We run on over 30 different operating systems. Informix, to the best of my knowledge, runs on two or three different operating systems—compared to 30. Relational Technology the same—three or four different operating systems. We're much more portable than they are. We make a pledge—you name it, we run on it.

Our strategy is to allow organizations to standardize on data management across all their computers. It's the portability—the ability to standardize on a data manager on all your machines, and thereby integrate and interconnect all your machines. Our products allow you to do it. The biggest problem facing MIS directors today is interconnecting all these

different kinds of computers—PCs, minicomputers, and mainframes. And you can't do that with Informix; you can't do that with Relational Technology; you can do that with *Oracle*. You can run *Oracle* up and down your product line.

And we give you lots of other things. We run faster, we're more robust, we give customers a lot better service. We have 4000 people in the company, half of which are dedicated to providing service for our clients.

In tech support?

A combination—tech support, education, consulting, systems integration, we provide service for all these things. And we're very careful with our clients, and we make sure when they make a purchase of *Oracle* software that it's a good investment.

To what extent is Sybase a competitor or player in your market?

I don't really think Sybase is a competitor—I really think Microsoft is our competitor.

Isn't Microsoft using Sybase's engine?

Yeah, but that's kind of like saying that General Motors uses Borg-Warner transmissions.

The latest cover story in Business Week talks about the maturing and slowing-down of the computer industry. Most of their data was based on the fact that mini and mainframe sales are way down. But it does seem like a lot of companies are slowing down their purchases. Do you agree with that? Does it affect you?

When you've bought a lot of hardware and aren't getting good return on your investment, you're not going to keep buying it unless you get a good return. There's been a lot of software missing. What enabled this technology to become useful is software, and it's really the absence of software that's slowing down the purchase of everything. When the software catches up with the hardware, people will start using these promising machines.

Various companies have tried in various ways to get their machines into the corporate marketplace, which hasn't historically been a stronghold of microcomputers. Probably the one that everyone is most interested in is how well Apple succeeds in getting the Macintosh entrenched in some of these corporate environments where companies like you are already a very strong presence. What's your take on how successful they're being with that?

Well, let me say that I think the Mac is a sensational computer. I've used Macs and I've used PCs and I think

Macs are dramatically better computers than PCs in terms of what they can do. The graphics are wonderful. But a lot of people just won't look at them. It's very interesting. A lot of large organizations still won't look at Macs because, you know, they've standardized on IBM PCs. I'm always amazed at how many people just haven't seen one. It's not even a matter that they've looked at it and rejected it, they just never even looked. There's this incredible inertia in the marketplace. People still buy from IBM because...

"Oracle's whole tradition is to allow you to interconnect all of these different computers from different manufacturers with different operating systems, different network technologies. To treat that network of computers as a unified information and computing resource."

You can't get fired...

Well, I think that's going to change, but I think that's true. They had a virtual monopoly; I mean, DEC is IBM's first serious competitor in 15 years, and IBM mainframes are very difficult to use and very expensive. But if more people saw the Mac, I think Apple would do better yet. They're making tremendous progress, but alongside of that it's still interesting how few companies really have the Macs. Some that do really love them. But it still is a very small percentage.

Do you think that that's based on a general reluctance to rock the boat?

I think that most people haven't seen them. I think strangely enough, Apple still has not promoted their products adequately. People there really don't realize how good the Macs are. I would love to see Apple run an advertisement showing a Mac application next to a PC application. Then you start to laugh. But right now it's just too abstract. You see someone walking into a room, or a kid in college bicycling around with a Mac in a basket, and they're very clever commercials. But the big point is, that if you could see a Mac next to a PC for 50 seconds on a commercial—it's a completely different matter.

Either that, or do some bozo testing and take a completely naive person

and see which machine they can do work on faster.

They've shown the output, but they weren't nasty enough to the PC. They should have gotten much nastier. I don't think people realize how much better Macs are than PCs. And the thing that's bad for Apple is their time, their differentiation is running out. PCs are improving now, faster than Macs are improving. 'Cause PCs have such a long way to improve.

I don't really think that was helped

too much by the Presentation Manager—an operating system that needs five megs to run.

OK, but five megs isn't going to be a big deal. You know, people do put five megs in their machines.

Well, maybe a few years from now, but that's \$1200-\$1500.

To corporations, that just does not make any difference.

Really?

That is just not the issue, because if you look at how much the person who's using the machine costs, you pay \$100,000 per person. And you get 1200 bucks to make that person dramatically more effective by getting them *Presentation Manager*—it's a no-brainer. People think that memory is going to curb *Presentation Manager's* impact in corporate America these days—it's irrelevant. A person costs so much more than a computer. They make the computer better. You get that return very, very fast.

To what extent do you think those \$100,000 guys are using those computers? There's the great myth of the executive who won't touch a computer...

I don't think it's the executive. The \$40,000 middle manager costs a corporation \$100,000, when you calculate in the office and the overhead

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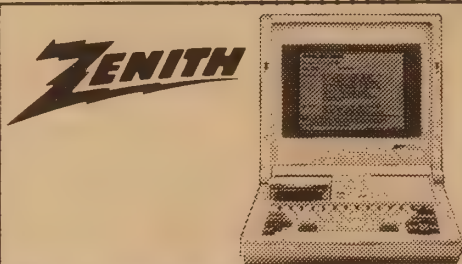
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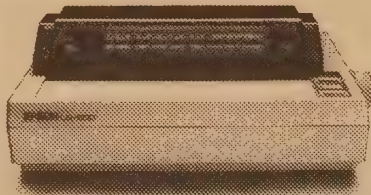
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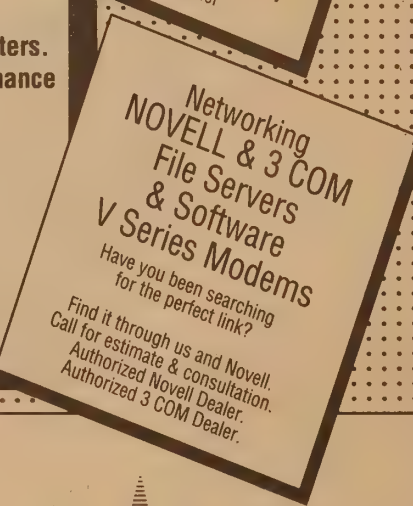
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and everything else. It's not just salaries—it's health care, plus an office, plus all these other things. It costs a lot of money. So why not pay an extra 1000 bucks for some extra memory? It's a no-brainer.

Now, I think *Presentation Manager* is going to be used, not only as a front end for *Excel*, and a front end for Lotus tools, but it will be used as a front end for applications that are networked into IBM mainframes and are networked into minicomputers, and they can replace terminals. So we will see a tremendous proliferation of personal computers replacing dumb terminals. And that will be a huge spike in the sales of PCs—diskless PCs.

Where do you think the OS/2 Extended Edition with the database in the operating system fits into this whole picture?

The database is not in the operating system. It's sort of like me taking a book and taping it to your tape recorder and saying, "Now I've integrated this book with your tape player."

Where does it fit? It would be interesting to see how successful Extended Edition is going to be. I mean, I'm sure IBM has lots of loyal customers who buy from IBM regardless of how bad their products are. Good or bad—it's from IBM.

I don't mean to say that the Extended Edition database is a bad product—that remains to be seen. But it's certainly missing an awful lot of features. I think there will be three major players in the PC database area—real PC databases: Microsoft, Oracle, IBM. And right now in terms of buying intention—we are first, SQL Server is second, Extended Edition is third.

Oracle Mail seems to be a unique product in the sense that it sort of elevates Oracle from a database system to a productivity tool. What's the inspiration behind that?

Just that people need tools to send electronic mail between different kinds of computers. *Oracle* is unique in that it runs on all sorts of computers, from very small to very large. And one of the things you want to do when you connect VAXes to mainframes to PCs is to send electronic mail throughout the network. So you need a mail system that runs on all your computers. And there aren't any—except ours. That's the inspiration.

Oracle's whole tradition is to allow you to interconnect all of these different computers from different manufacturers with different operating systems, different network technologies. To treat that network of computers as a unified information and computing resource. One of the

things you do to unify that is to let people send mail anywhere in the network, regardless. I'm sitting on my Mac and sending mail to you at your PC and that mail note might pass someone on an IBM mainframe, someone else on a VAX—we will do all of these.

How about CASE (computer-aided software engineering)? I notice that you make some CASE tools. Do you think that's going to be becoming more and more important?

Oh yeah. I mean, software development technology is getting more powerful, allowing you to build applications faster. You want to make sure you just don't build the wrong application faster. So to avoid that syndrome, you got to have a methodology and some computer assists to allow you to capture a model of your enterprise in a database, in a computer model, called an enterprise model, and from that begin to implement your applications—your automation systems.

Without CASE tools, systems analysis, building an enterprise-model becomes haphazard, non-methodical, and has no computer assists. So I think our CASE products are essential to make systems analysts more effective, by making them less like artists and more like engineers. For a long time people thought this was more like an art than a science. Well, it's been more like an art than a science for too long. I mean, art is wonderful, but I'm not sure I want to run my auto parts store based on artist's software.

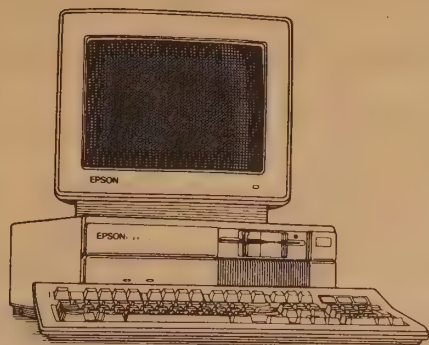
Two of the operating systems you run on are OS/2 and UNIX, in its various flavors. What types of customers are going for OS/2 and which are going for UNIX?

I think the ones that are really loyal to IBM—when IBM says something strategic they write it down—they put up OS/2. And those who are more avant-garde and a little bit radical use UNIX, because it's faster and more robust. So the only thing OS/2 has going for it now—because it has almost no users—is that IBM says it's strategic. If IBM didn't say it was strategic—like, even UNIX is upward compatible with MS-DOS. There's software, from Locus and others—you can get MS-DOS software to run in a window. So, you can't even say, "Well, OS/2 is upward-compatible with MS-DOS—that's what makes it so much more attractive." It really is IBM and Microsoft's marketing clout saying, "This is what we're going to be using, so this is what you're going to be using."

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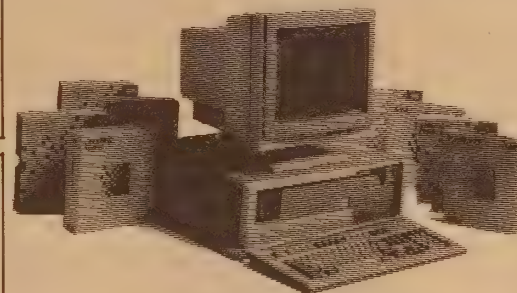
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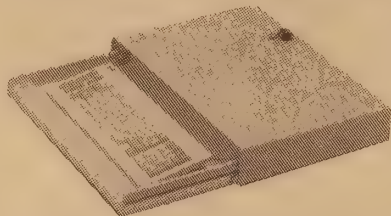
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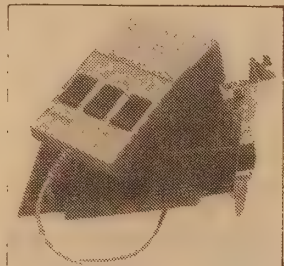
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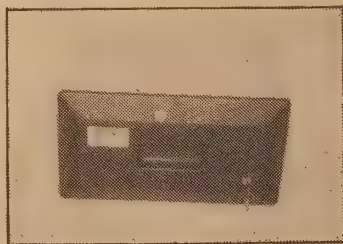
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"For a long time people thought software design was more like an art than a science. Well, its been more like an art than a science for too long. I mean, art is wonderful, but I'm not sure I want to run my auto parts store based on artist's software."

rest of us have to figure out what the market wants.

You've endorsed both UNIX standards—OSF and UNIX International.

Yes, we're notoriously promiscuous.

What was your thinking behind this?

Well, we really have no dog in this fight. If two standards emerge—and I doubt that two will—we'll support both standards. Right now we support dozens of different UNIXes, and we'd love to see it reduced to two—we'd love to see it reduced to one. And we think that there eventually will be one, but in the meantime we're committed to—if customers prefer the OSF product, we'll support that; if the customer prefers the UNIX International product, we'll support that. We just want to reassure people that we will be supporting the output of both those organizations.

Graphics are getting more and more important, and Oracle, at this stage, is not a particularly graphics-oriented product. Does this suggest new directions that you need to move in?

Two years ago we decided to put graphical user interfaces on every one of our tools. In fact, we are unique in that we will not only support things like *Presentation Manager* graphical user interfaces, but we will support all the graphical user interfaces. Whether it's Motif on UNIX, DECWindows, whether it's *Presentation Manager*, or Apple Mac—we will support all of the different graphical user interface standards.

So again—promiscuity is the approach we use. We support all networks; we'll support all operating systems; we'll support all the graphical user interfaces. But all of our new tools are highly graphically oriented, and you can see that the stuff we'll be coming out with in May is quite a radical departure. And we'll con-

tinue, by the way, to support dumb terminals—the 3270... But we are heavily tuning our application user interfaces for graphical user interfacing.

Oracle is obviously growing very rapidly. What kinds of growing pains are you experiencing?

Mundane things like having to move to a new building every two years. No longer knowing all the people I see in the hallway.

Sometimes we have concerts here—we bring in the San Francisco Opera or San Francisco Symphony. It used to be that I knew everybody by name who went to these concerts. Now, not only do I not know them by name, but there are some I've never even seen before. I think that's real disconcerting to a lot of people.

But we're a highly centralized organization, and the individual groups have a very close identity with the products, goal, and services they're providing. So, it doesn't really seem like one 4000-person company. It seems more like, oh, 100 40-person companies.

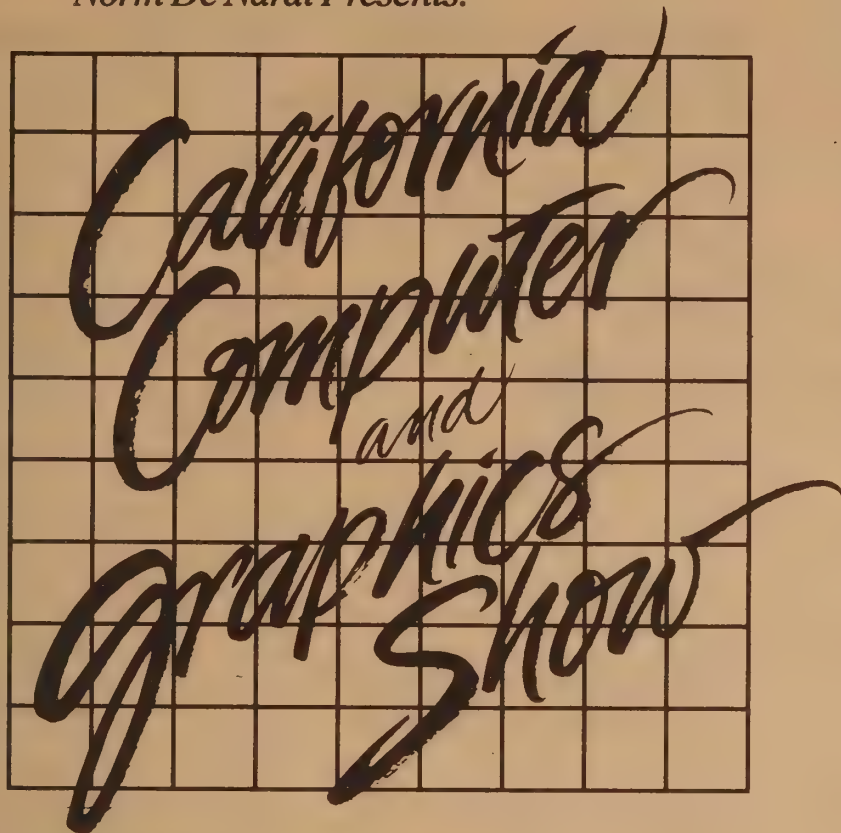
You do a lot of business internationally. How do you keep people spread all over the world more or less working in the same direction?

Well, they sell the same products. We have regular meetings and we set company policies. But all of our international subsidiaries have managing directors from the country. Oracle France is 90% people from France. And people who aren't from France might be from Germany or from India, or they might be from Holland. They're not necessarily from the United States. Going in the same direction is just a matter of deciding on the company strategy you want to use to sell your products.

Most of your products are sold direct rather than through dealers?

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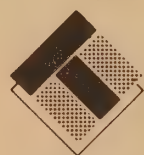
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Is that going to change now as you get into more micro-based products?

Yeah, I think more and more of our products will be sold through the dealer channel. It really remains to be seen—it's going to be very interesting to see whether the dealer channel is going to provide the service necessary to deal with networks. It's a fascinating topic of discussion.

Jim Clark of Silicon Graphics made the point that getting the dealer channels familiar with UNIX systems to a degree where they could function is a very serious problem. You can't walk into Businessland and expect UNIX wizards.

Well, it's worse yet when you include networks. Networks are much harder than UNIX systems. So it's a real difficult problem.

A lot of people will assert that the talents a CEO needs to take a company from the start-up phase to a mature stage are different from those needed to guide a mature company. Do you...

Say that to Ken Olsen. Ken Olsen started DEC—it's now a \$12 billion company.

But they've stumbled a bit along the way.

Yeah, everyone stumbles a bit along the way. I hope Oracle stumbles just like DEC—that very same way. Even IBM stumbled over the last few years. I think it's certainly true that there's a turnover in executives from the time you start a company to a maturing of the company—that's true. It's statistically evident. But there are some people who... I think it has a lot to do with whether you're personally inclined, and you're still enjoying it.

A lot of it must have to do with whether a leader can grow with their company. I mean the classic Steve Jobs...

I have tremendous admiration for Steve Jobs. I think it remains to be seen who's the better CEO at Apple.

Steve Jobs obviously thinks the university market is, if not the wave of the future—at least heavily plugged into the wave of the future. Do you agree with that?

No, I think what Steve Jobs believes is that if he can ship his machines to universities, then people leave universities and go to work in businesses. And they have preferences.

Essentially the Macintosh strategy.

People said it's a great first market because people at universities are very avant garde and will adopt new technologies, and they'll write lots and lots of software and graduate a lot

of people and eventually they'll be in industry and will have preferences for a type of machine. So it's a great first market for him to go after. It's a wonderful strategy.

Does Oracle run under Mach?

Yes, as a matter of fact we do. We run under Mach on a Bolt, Beranek and Newman Butterfly. So yes, we do run under Mach and we will run on the NeXT machine. Mach is really a pretty easy UNIX derivative to run under. And again, it wouldn't surprise me to see NeXT move, at some point in time—to move from Mach to UNIX System V.4. They'll move to the best UNIX. If they perceive Mach's better, they'll stay with that; if they think UNIX System V.4's better, they'll move to that. I think they'll move to the best UNIX.

Standards, open systems and portability are all very very important. I think people will, more and more, be judging software products and hardware by their adherence to certain industry standards. At the same time innovation won't stop. There will be more creative people like Steve Jobs, who came up with NextStep—a wonderful new user interface. And innovation will continue.

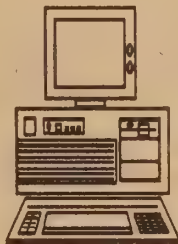
And while there will be standards, there will also be new technology. I think the key thing is for organizations to position themselves such that they can exploit this new technology when it becomes available—not lock themselves into any one vendor's very pricey, very proprietary technology. So what that really means is a gradual erosion of IBM's dominance in the world of computing. Not IBM, the company, but the IBM mainframe. That more and more, it will be sharing automation responsibilities with minicomputers, desktop computers, and workstations.

Personal computers will cease to be known as personal computers and be known as workstations, because the very name "personal computer" is getting to be a misnomer. Because it's personal when you make personal decisions as to what software you run on it—how to configure it. And that's no longer the case. It's like, "We're on an Ethernet, Charlie, and if you want to be on the network... We decided to use the Oracle database, so if you want to share data, you'll use the Oracle database. And we use these applications for scheduling, and we use this mail system—if you want to be on the mail network, you'll use it." So the notion of making personal decisions and being an autonomous user is gone. More and more, if you want to cooperate with people, it means a lot of decisions have to be negotiated, or handled by someone whose job it is to run this little net-

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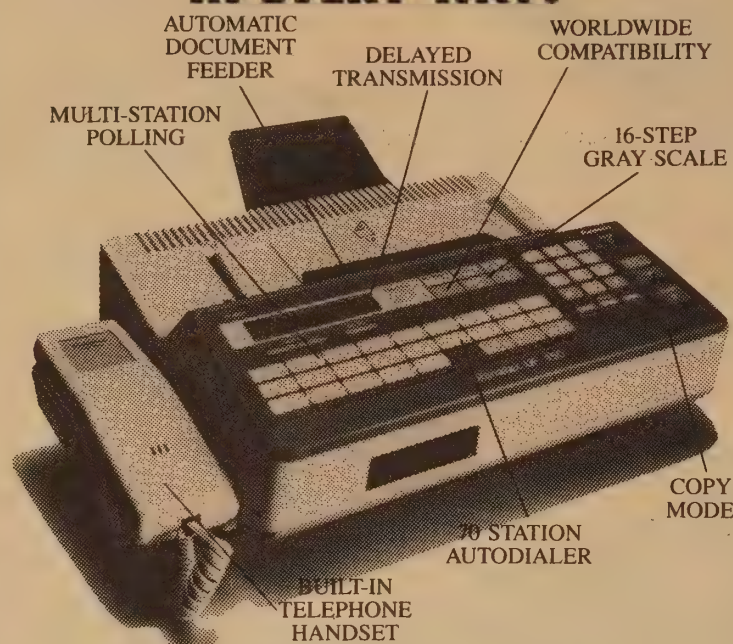
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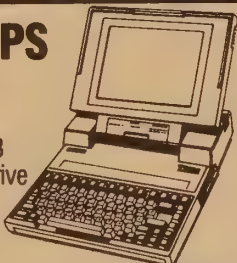
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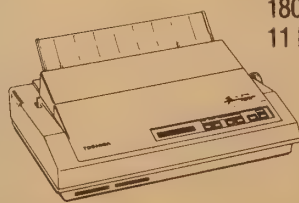
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"I hope what we don't have is a lot of important people spending a lot of time worrying about the progress of lawsuits. Already the Japanese think the United States is a joke because we have so many lawyers."

work of computers. So again, gradually we'll see this notion of a personal computer recede and the notion of a workstation become more popular. We could form a magazine called *Personal Workstation*. Get that name, because I think that's where they're going to be.

Are you in the process of hitting any technological walls? The DRAM shortage strikes me as one of them that's sort of inconvenient.

Well, it's really hurt Apple. I think that's kind of a short-term, interesting problem—us becoming too dependent on the Japanese and the Japanese being smart enough to recognize that and make a few bucks. I admire them for that. I don't admire us for being in that position.

The technology potential is extraordinary out there to continue to move ahead rapidly. And no—I don't think it's a technology issue, I think it's not an issue of technology creation—more an issue of technology transfer. There's great technology in the world. The question is how do we deploy it to our customers and make sure our customers successfully use it to solve their enterprise problems?

That's where we're breaking down—not in technology creation, but in technology transfer. Unless we as vendors and dealers start focusing on the issue of technology transfer, service, and support—this technology is going to languish. It will languish in research labs and it will languish on customer's desktops—unplugged, or sitting there. I still love the guy who comes in with the PC and hits the button and it says, "At nine o'clock you have this; at ten o'clock you have this." All he uses the PC for is to see what his schedule is every morning—great use of a workstation! Paper and pencil is much more effective for a job like that.

Could you explain the online transaction processing features that are in Oracle's Version 6?

Very exciting stuff.

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It's the ability to run lots and lots of users, updating data at a very high rate. The classical online transaction system is the airline reservation system where you have people buying lots of seats and lots of people running out of seats. You say, "Well, I can get you seat 4B," and someone else is trying to get 4B, and you have to make sure you don't sell two 4Bs on this particular flight on this day. Lots and lots of people buy tickets—lots of people call travel agents reserving their seats, and how can a computer system coordinate all this activity? That's online transaction processing. In banking you have all of these teller terminals—there are teller terminals without human beings attached and teller terminals with tellers attached, making deposits and withdrawals—tremendous volume. The single most exciting thing is the New York Stock Exchange where there are all these trades going on...

There seem to be a lot of lawsuits these days. Ashton-Tate sued Fox Software; Lotus sued Paperback, etc. What do you, as an industry leader, think of this trend?

I hope that we're not an industry that's governed by some of these lawsuits. I hope what we don't have is a lot of important people spending a lot of time worrying about the progress of lawsuits. Already the Japanese think the United States is a joke because we have so many lawyers. I mean, they have more engineers than we have—by a slight amount—they have about 10% more engineers, and they're half the size of our country. But we have more than 10 times the number of lawyers. And they think that's pretty amusing.

The more time you spend in litigation, the less time you spend in innovation. It's just a tragic waste of human resource to argue about that. I'd almost prefer going back and just getting guns and shooting each other. At least you get the decision more quickly. ■

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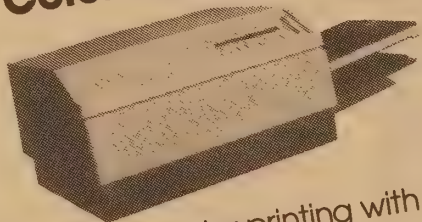
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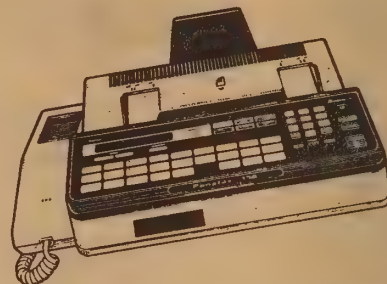


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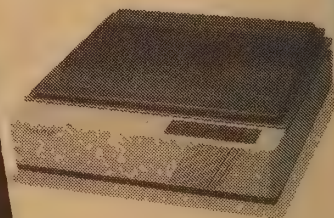
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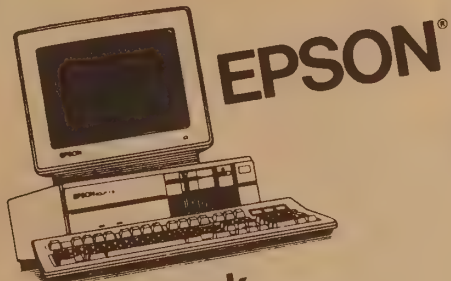
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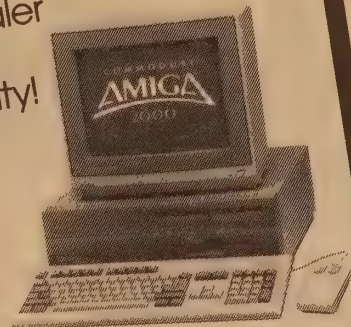
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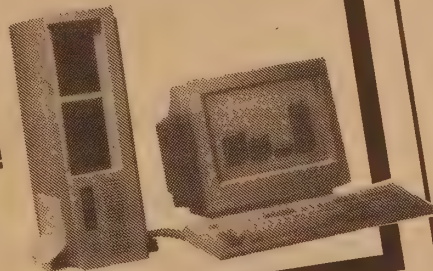
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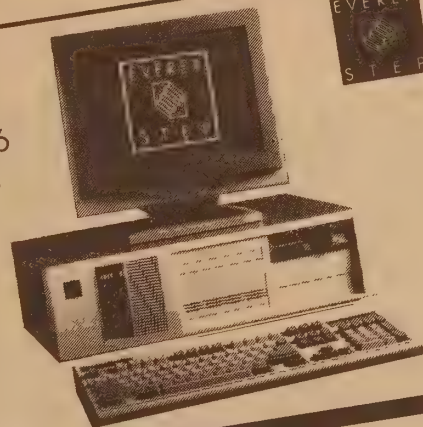


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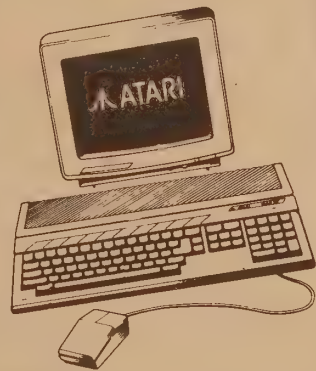
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How To Get A Job In High Tech

Bay Area Job Outlook

Employment Prospects For Current Graduates

So, you want to work in the personal computer industry?

If you have a computer science or electrical engineering degree, you're a shoo-in. For those holding such degrees, on the masters or bachelors level, employment opportunities in the Bay Area look excellent. There are a lot of companies in Silicon Valley and the Bay Area. Many will be on local campuses (some already have been) actively recruiting the best and the brightest among this year's crop of tech graduates. They are offering salaries that start in the high twenties and may range into the mid-thirties. Some firms will also be looking for MBAs with tech undergraduate degrees for management and marketing positions. Salaries are likewise good.

But not everyone who wants to work for a computer firm wants to work in a tech-related area. After all, there's marketing, sales, human resources, customer service, public relations—lots of positions that don't require a hard-core engineering or technology related degree or MBA. The positions are fewer, definitely, and some require at least a moderate familiarity with computers and software, but for the motivated liberal arts major there is hope. No, companies won't be out looking for English lit majors or art students during their recruiting efforts, but if you have some related job experience (such as an internship or summer job), know what kind of job you want, and can write a resume and cover letter, you do stand a chance.

The best source of information about what job opportunities are out there in the computer industry is the people who recruit, screen, and counsel job candidates. So, we talked to personnel administrators at eight Bay Area computer firms and career counselors at four universities to get a picture of hiring trends for 1989. Many firms are hiring, some just a little, some quite a lot. What follows is advice and information for the entry-level job seeker, and an inside look at hiring trends in the personal computer industry for 1989.

—Tony Rocco

PERSONNEL ADMINISTRATORS SPEAK:

What is your overall employment outlook like for 1989?

We're probably going to be increasing our head count somewhere in the neighborhood of 50 people. We have 300. We've typically doubled in size every year since 1982.

Ann Brown, Staffing Specialist,
Adobe Systems

It depends on how things go and what new projects come up. As new products come up, we might [be hiring]. I don't know.

John McGuire, Personnel Administrator, Thunderware, Inc.

We have no intentions of hiring new staff.

Andrew Wyatt, Personnel Director,
Bizcomp

Paracomp is coming out with more products soon, so we will be hiring more people to help with customer support. We always need programmers. We're growing fast and looking to take on new products always. We

do some of our own [product development] in-house and we purchase products also. Currently we have a staff of 15 and we'll probably hire five or six more people.

Nancy Munch, Office Manager,
Paracomp

I can't give you any solid figures. A year ago we were about 40 employees and we're 95 now. We expect to grow on a regular basis, so it's pretty healthy. But in terms of actual numbers, I couldn't give you any.

Duncan MacMurdy, Human Resource Manager, Farallon

What areas will you be hiring the most people in?

Mainly in the technical areas; software engineers.

Adobe Systems

It shifts around. For a while we were hiring marketing people; most recently we've been hiring people in our sales department and in R&D.

Farallon
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The Job Interview From Hell

Graduating Job-Seeker Tells All...

By Steve Guttman

"Perseverance and a sense of humor"—that's what it takes to get a job in high tech. That is, according to Stephanie Buchholz, a senior staffing specialist at Sun Microsystems.

These days getting a job in high tech is no picnic. Gone are the days when an MBA or a BSCS/EE was a guarantee of Friday beer busts and stock options. The industry is maturing, and, as it does, the job hunt/acceptance cycle is changing from "Nice to meet you, when can you start?" to an *extended resume review/multiple interview* scenario. It would be misleading to say that the industry no longer values desire, sincerity, and technical chops. You just need to be a little more clever in demonstrating those qualities to a company than you did in the past. That doesn't mean you won't end up busting your buns 80 hours a week. But it may take you a little more work to enjoy that privilege.

The Nature Of The Beast

Let's face it—in general, high tech firms are not the most organized companies on earth (some might say that Apple is the most re-organized). But if you wanted a well-defined corporate structure, you would have gone into public accounting, right? Many firms are trying to make that cross-over between a living-on-the-edge/startup corporate style and a more rational business environment. Some are simply growing so fast that disorganization has become a way of life. This means that resumes don't always get to the people who are supposed to receive them, and chances are pretty good that when you call to find out whether your resume has been received, no one will have ever heard of you.

Horror stories abound. A friend of mine was *asked to interview* at a Peninsula telecommunications firm

after they read a business plan he had written (for that firm) as part of a class assignment. After the interview (which he felt had gone well), he waited four weeks without getting any kind of response. He then called and left multiple messages before they finally called him *two weeks later* to say that it would be another two weeks before they could tell him anything. Not the most considerate way to treat a potential employee.

Another friend of mine was asked to interview with two marketing groups at a South Bay semiconductor firm. One of the groups arranged to see him before noon and the other scheduled him after lunch. After his morning interview, the first group basically dumped him. When he asked what he should do for lunch, one of the employees suggested that he check out the McDonald's a couple of blocks away.

Despite the kind of behavior that might inspire you to oppose a ban on semi-automatic weapons, most of these firms are just unintentionally annoying—they don't mean it. They simply are not organized enough to be more responsive or considerate. So you shouldn't take this kind of behavior personally, or even as an indication of how the company treats their employees. But it does mean that **you** must be more organized, more motivated, and, above all, more tenacious than if you were looking for a job in a different field.

Use Your Head

Many of the skills and sensitivities needed for success in your job search have to do with attention to common-sense details. I'm talking about things that are completely obvious, but which most of us can't remember until after we've been told 18 or 20 times. I don't just mean, "don't eat a garlic pizza before an interview." I'm talking about details like sending your resume to everyone in the com-

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These days getting a job in high tech is no picnic. Gone are the days when an MBA or a BSCS/EE was a guarantee of Friday beer busts and stock options. The industry is maturing, and, as it does, the job hunt/acceptance cycle is changing from "Nice to meet you, when can you start?" to an extended resume review/multiple interview scenario.

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**Bay Area
Job Outlook**

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Programmers, of course. Since we're always revolutionizing our products every six months, we hire programmers. But we get most of our programmers through networking. We never have any trouble recruiting them.

*Sylvia Paull, Manager, Marketing,
Software Ventures*

**What areas will you
be hiring entry level
people in this year?**

Engineering areas as well as finance and some marketing.

*Loretta Sanford, Senior Staffing
Specialist, Apple Computer*

In the past they've mostly been in the technical area. In fact, all in the technical area. Those are masters-level electrical engineers, both in digital and analog hardware and the software engineering area.

Bizcomp

Probably in the finance and administration area. We did quite a bit of college recruiting last year and we hired four engineers. And this year, with a more conservative approach to hiring, we haven't done any college hiring. We're hoping to ramp that up later on.

Adobe Systems

Entry level is administration (clerical), usually, or a project coordinator. From time to time we have openings. The CAD industry is fairly new to the world. So there aren't a lot of seasoned people, anyway.

*Kim Young, Personnel Manager,
Autodesk*

At all levels, programmers, sales people, shipping. We definitely plan to expand our marketing department. We need both entry level and experienced people in marketing.

Software Ventures

**Would you say opportunities
look good for
entry level people at
your company?**

That's sort of a relative question (laughs). Yeah, they do. We'll probably be doing less college recruiting this year than we did last year. We look at it as a long-term investment so that in several years our work force is where we need it to be.

Apple Computer

That depends on how capable they are. If, for instance, an entry-level tech for telephone support is able to catch on to the product, then we'd take them. It depends on their knowledge.

Paracomp

There are some entry level positions, but at this point we're going for the higher end with a little more experience, particularly in R&D and sales.

Farallon

For entry level people it's excellent.

Software Ventures

We have 500 people worldwide. We're really not large enough yet to absorb a lot of trainees. So, a lot, no; a little, probably. You could probably count college graduates on one hand. What we are looking for in software development is three to five years programming in C. I do not want to say that we are not interested (in entry level people). There are kids who work in their garage or took over their mothers' sewing rooms to build computers or write programs. Our eyes are always open and looking for that.

Autodesk

**Will you be doing
much entry level
hiring in marketing
and sales?**

We'll be doing a little bit of hiring there. Typically in the sales and marketing areas we tend to hire really seasoned professionals. We do not hire junior people in the sales and marketing areas.

Adobe Systems

We are hiring in sales right now. Probably in sales we'll be hiring up to six people.

Paracomp

**Will you be doing any
college recruiting this
year?**

No, at this point we don't [plan to]. But I'm hoping that will change at the end of the year because we were very successful last year.

Adobe Systems

We will be sending mailings to colleges. I'm not sure if the interviews will be on campus or off. I would say more likely off campus.

Paracomp

We have not aggressively gone out on campuses and conducted interviewing. We have placed announcements on job placement boards at the local colleges.

Thunderware

We will be recruiting people, but at this time there are no plans to recruit recent graduates. We'll be attending career expos, those kind of things.

Farallon

No. Never. Only the CIA does that. And they need to do that.

Software Ventures

We do campus recruiting. We go to UC Berkeley, Stanford, Santa Cruz. We've done it this year at UC Berkeley. We look specifically for technology majors.

Autodesk

**What schools do you
focus on when you're
hiring?**

We recruit nationally. We'll be going to between twenty to thirty.

Apple Computer

San Jose and the local colleges here.

Paracomp

We've recruited from the local universities—Stanford, Berkeley, San Jose State, and Santa Clara. In the past, we've hired new grads from all of those schools.

Bizcomp

Berkeley, a couple of the local community colleges, Diablo Valley College, Stanford.

Thunderware

We have six that we go to. We go to MIT, Carnegie-Mellon, Stanford, Berkeley; this year we went to Cal Poly and Caltech. Since we don't do college recruiting in other than the technical areas, those are the schools we go to. Most companies are the same way. They hit the big techie schools.

Adobe Systems

**Can you tell me what
entry level salaries are
like in some of the
fields?**

I'd rather not do that. We're competitive. We're highly competitive and

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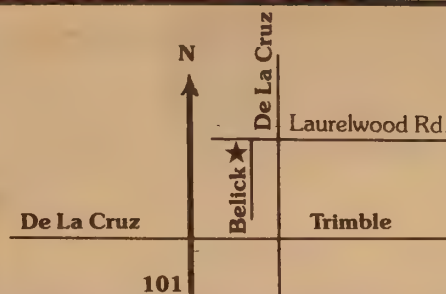
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Bay Area Job Outlook

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try to pay all of our employees toward the high end of the salary range.

Apple Computer

It really depends. Unfortunately I really can't share those with you. It really depends on the person. I would say just speaking broadly, probably low to mid thirties. That's pretty much in the engineering area that we're talking about. In some of the other areas it would be more like high twenties.

Adobe Systems

It's negotiable. It depends on their experience and knowledge, of course. I'm going to say around \$25,000.

Paracomp

I couldn't give you any figures. We're certainly competitive.

Farallon

High. Very high. I know for a fact that they're higher than entry level salaries at Apple Computer. The computer industry in general offers better salaries than any other kind of technological industry.

Software Ventures

Well, administrative (clerical) people...\$1700 is what Heald College quotes. When you say entry level in the marketing department, I say that's an administrative position. Entry level in sales—there's no such thing. You're an admin person, or what we call sales support. If we've got a college graduate with a degree in computer science without any professional experience it would be somewhere around \$28,000 and up.

Autodesk

How should someone interested in working at your company ap- ply for a job?

They should contact our placement office. They also can write to us, but trying to get an interview on campus would be the most successful way to do that. We've finished our on-campus recruiting for this year. So if you're interested this year, I don't want to encourage people to do that because we have plenty of candidates right now. We started last fall. We did on-campus interviews from late October to March. Now we're in the process of interviewing those people

we interviewed on campus here at our headquarters.

Apple Computer

The best way is to send us a copy of your resume. Our receptionist goes through all the resumes and sends out response cards to the applicants so they know we did indeed receive the resumes. Then they come up to myself or another person that works with me. We go through and take a look at our current job requirements and things that may be happening down the road. And then we route them to the hiring managers who in turn get a hold of the applicants themselves.

Adobe Systems

I always recommend that they send in their resume, and I always keep it on file and if something comes up that I feel might interest them, I look through the files and go from there. A lot of people will send in resumes and I think that works out pretty well. I try to hold the resumes for at least a year and then review them from time to time and see what our needs are.

Thunderware

If they just send in a letter with their resume, we respond to every one of those.

The only problem with this method is timing. Smaller companies aren't necessarily always hiring. But we do keep resumes on file.

Bizcomp

The best thing to do is put together a resume and direct that resume to the human resource department. We are pretty diligent about making sure that resumes end up in the hands of the hiring manager. If people want to make a follow-up phone call, that's fine.

Farallon

They should call me. I much prefer talking to people over the phone. A resume and a cover letter are artificial. They are not representative of the person. You rarely get a picture of the person from that information because they spend hours or pay someone to spend hours to draw up this information. You talk to them on the telephone and you get them with their pants down. They're there, they can't hide.

Software Ventures

They send a resume to me. I see every resume that comes in here, and I

screen it and send it to every manager who would be interested. We then keep that resume, and we file them by strongest suit. When the resume is received here we acknowledge it with a postcard. We then have a database. If the individual has sent in a follow-up letter or called us, we will give them a courtesy call back.

We post openings in-house for one week because we want to promote our own people. That might be one reason why entry-level positions here are pretty much limited to the admin positions I've discussed. Managers have to entertain in-house interest first. Then if they can't find a suitable employee to promote into a position, we then start looking outside the company, and place our ads, etc. Every resume I get I try to squeeze all the blood out of it. Because, hey, it's a bird in the hand. At Autodesk, very seldom will a resume get lost.

Autodesk

Would you be looking to fill jobs with people with liberal arts back- grounds?

Not especially, which is not to say that we never hire people with liberal arts degrees. If they had a liberal arts degree, they would have to have a lot of Mac experience. Either they have a Mac at home or they're pretty technically oriented. The recruiting that we do is primarily for engineering or computer science or MBAs.

Apple Computer

Yes, definitely. That's the kind of person we employ here. English literature is a great field. They have an understanding of western civilization and the culture we live in today. So they can relate to our market much better. Also they have a foot in the literary world, especially if they have a background in literature.

We never hire people with business or marketing degrees. They don't know anything. They don't know anything that's not commonsensical. It seems to me that they just wasted their time. If someone had a masters in philosophy I would much rather hire them for my sales force.

Software Ventures

We don't look at a piece of paper because we're so open to people who want to learn and they're bright. A lot depends on that interview and that

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drive that comes across the table when you're talking to them. We do not emphasize degrees. What is a degree? Book learning certainly didn't make me the person I am today.

Autodesk

**Is it true that if you
don't know somebody
you're pretty much out
of luck?**

Not always. We've hired a lot of people that way, to be honest. And we also use a lot of advertising for a lot of our positions, so the people of course are just responding blind. We value our employee referrals a lot because we tend to hire the cream of the crop, and so we feel that if an employee is going to refer someone to us then they're also that caliber. But I wouldn't say it's detrimental at all to send in a resume.

Adobe Systems

A lot of people will say you can only get somewhere if you know somebody. I don't think that would be the case here. I think it's your background and how you present yourself, that's what you've got going for you. It's not because you're a friend of so-and-so. From a personnel standpoint, it isn't fair to everyone else to pick somebody just because they're a friend of so-and-so's. And the more people you interview, the better chance you have of finding someone to fit the job.

Thunderware

Certainly there are dozens of ways to get a job. Anybody who's looking for a job had better pursue all dozen or so at the same time. The resume is an important document to be able to give to people. It's very much worth a person's while to make a follow-up telephone call. And obviously if you can get to know people within any company, whether they are friends or associates, that's going to be a help because that's going to be another opportunity where you could have an interview with someone. I also think informational interviewing is a real good idea. People don't do enough of that.

Farallon

COLLEGE CAREER COUNSELORS SPEAK:

**How do you see the
employment outlook
in the Bay Area for
entry level people?**

It's been a good year. I don't think it's been the absolute best year we've had in recent memory, but it's been a good year. We have found that companies tend to be recruiting more and hiring a little bit less, or being more selective in their hiring. They are being more strategic in their hiring than they have been in the past.

*Maureen McNulty, Director, Career
Development and
Placement, University of Santa
Clara*

Excellent. Great. For engineering graduates it's been a tremendous year, an upsurge.

*Dr. James Patterson, Coordinator of
Engineering And Science Counsel-
ing, Stanford University Career
Planning And Placement Center*

I would say it's running slightly up from last year. When companies get a lot of applicants through the mail, they eliminate their on-campus recruiting. But we pretty much average about eight to ten (companies) and usually they are hiring our students. We have companies that continually come back like Hewlett-Packard and Convergent Technology. These are large companies that are real pleased with our students.

*Kappy Powers, Career
Counselor, University of California
at Santa Cruz*

It's very good for electrical engineers and computer science majors. Extremely good, because we have more companies here this year than we've had in the past.

*Kathleen Stanton, Technical Career
Advisor, Career Planning And
Placement Center, University of
California, Berkeley*

**What degrees are re-
ally hot? What are
high tech companies
looking for right now?**

What they hit us for at Santa Clara may not be reflective of what their overall needs are. Typically Santa

Clara has a very strong EE program and EE/CS, DIS, finance, and marketing. Marketing where the person has a tech undergraduate degree and a marketing graduate degree. But I think that the heavy hiring at the firms, in fact a bias now, is to get someone with a good undergraduate degree and do training.

Santa Clara University

I think sales and accounting are both good right now.

University of California, Berkeley

**How do humanities
and other non-tech
majors fare in looking
for work in high tech
companies?**

A number of the senior people in firms say they are very open to humanities or liberal arts students. We have not seen that translate down to the hiring managers and the HR people. We think it probably should. While the common wisdom of the Valley is that you must have a tech degree to work at those firms, they certainly do hire people to do finance, to do accounting, they hire people to do advertising, media work, they hire people to do HR, so there are places in those firms with non-tech training. But they're significantly fewer. Typically, one would not find a firm with recruitment schedules for those kinds of folks. But on occasion those jobs open.

Santa Clara University

The first job that comes to mind is a technical writer for a computer company. Often the companies would rather have an English major and teach them the computer side than have a computer science major that doesn't know how to write. There's not a lot of technical writing jobs, but there are some.

One thing that's happening is the number of computer science majors is going down nationwide. It's just not seen as the hot major as it was a few years ago. Some of the companies are interviewing liberal arts majors for computer programming type jobs because there aren't enough straight computer programming majors. I think maybe that's just holding true at the schools like Berkeley and maybe Stanford because they know we have

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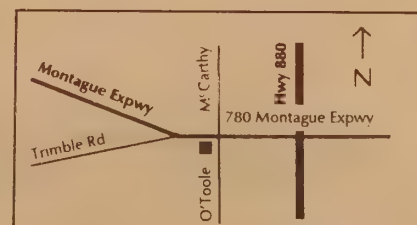
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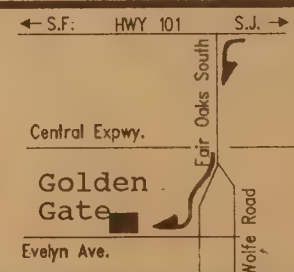
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- NEC Multisync II 560
- Samsung Multisync 425
- Samsung VGA Monitor 360



Bay Area Job Outlook

continued from page 76

really top caliber students.

As the years go on, since there are going to be fewer students coming into colleges, I think companies are going to have to consider liberal arts majors more and more across the board. There are a lot of computer jobs that are more general, like technical support reps.

University of California, Berkeley

There has been a consistent trend over the last several years that high tech employers, who would recruit only our engineering majors or only our computer scientists, are in fact looking at what we categorize here at Stanford as "any major." There could quite possibly be an English major or art history major who may have an interest or background in engineering or computer science. Our students are so diverse that we've been seeing a trend of corporations looking at all the majors we have to offer. The bottom line is that companies are opening their eyes and broadening their picture of on-campus recruiting. We need to caution ourselves that this is

a trend we see on the Stanford campus, which may be very different from University of Santa Clara, or Berkeley, or other state schools.

*Yolanda Morales, Supervisor Of
Recruitment Activities, Career
Development And Placement,
Stanford University*

What advice do you give non-tech majors to help them find work?

They *must* get some work experience before their senior year. An internship or a co-op if the school offers cooperative education. Volunteer opportunities. A lot of times if you go to do some work at a volunteer organization, they will give you some leadership role fairly quickly. You get a chance to develop a good portfolio that can then be used to get a job at a for-profit high-tech firm. The most important thing is to get some kind of tangible experience.

Santa Clara University

Students in other areas can contact the companies to see if they offer internship programs during the summer and get their foot in the door, whether it's human resources, or marketing, or sales, or whatever. We recommend this even for the technical people. If they have an internship or have worked in a related field in the summer, their chances have increased. And usually when they graduate if the company likes them they're going to offer a position. I've also found if you have related experience, the starting salary is going to be more than the average.

University of California, Santa Cruz

Do you have any information about entry-level salaries?

For the software or hardware engineer, I see a range from \$28,000 to \$34,000. And we're talking with a bachelor's degree.

University of California, Santa Cruz

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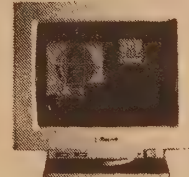


RELISYS 5154 CGA/EGA

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- Video: TTL positive
- Scanning frequency: Horizontal 15.75 KHz (mode 1), 21.85 KHz (mode 2)
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RELISYS 9513 PS/2 VGA

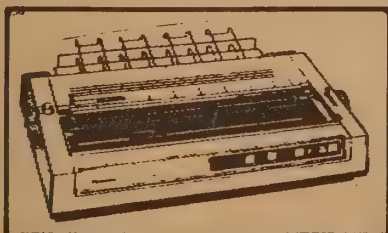
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Job Interview From Hell

continued from page 71

pany you can possibly think of, and writing thank-you letters after being interviewed.

Be persistent with follow-up phone calls. I've heard stories of executives who won't even take a first phone call from a job applicant because they figure if the person really wanted the job, they'd call back.

Avoid being hardnosed during interviews. You want to show that you're an independent thinker—not that you're capable of offending every interest group at will. And be creative. You don't have to dress up in a gorilla costume and sing your resume to the VP of marketing, but a catchy cover letter couldn't hurt.

The Resume Is A Marketing Tool

A resume is not simply a tedious, boring thing to write—it's *the first impression* a company will get of you. "It's not supposed to tell everything about you. It's supposed to tell what the company needs to know in order to stimulate an interview. So in your resume, it's extremely important to highlight what you think that

It's my firm conviction that any person can get a job with any high tech firm. I don't care if you formerly worked as a midwife—there are useful things that high tech companies will pay you to do.

company needs to know about you... why they should talk to you," says Sun's Stephanie Buchholz.

Don't just make your resume a list of everything you've ever done. Let it reflect the kind of job(s) you're interested in, and tailor it to the kind of companies you're applying to. It's really an opportunity to help you clarify the skills and qualities that you bring to a potential employer. So put yourselves in *their heads*, and try to understand what's important to your target employers. Furthermore, you don't have to be schizophrenic to write two or three different versions of your resume. Tune each to the different types of high tech firms that you're looking at.

And finally—*think advertising*. Make your resume look good. Use some pretty fonts, give it a nice layout—Macintize it! Most of these firms have hundreds of resumes passing their desks each week. Find a way to make yours stand out.

It's Not What You Know...

The old chestnut, "It's not what you know, it's who you know," is never so true as when applied to high tech. Almost everyone I know with jobs in the valley got them through networking. You might have the greatest education and experience in the history of the world, and still not get the time of day from many high tech firms. Why? Besides the obvious your-resume-just-didn't-make-it-to-the-right-person syndrome, many firms hire almost exclusively on the basis of employee recommendations. In fact, many pay their employees for referrals who are hired.

Says Tim Johnston, manager of university relations at Sun, "I encourage students to find contacts. If that candidate's resume is forwarded to me from someone in the company, it's likely that I'm going to take more immediate notice... because I feel an obligation to the employee to let them know what the outcome is."

This suggests doing everything you possibly can to build contacts within a firm. And this really isn't as difficult as it sounds. If you know anyone at all in the valley, they know ten people who can refer you to ten more people and on down the line. And unless they happen to be very busy executives, most people will be happy to talk with you about their company. For those graduating from a college program, recent alumni are also a ripe source of information.

Know What You Want

High tech firms are very individualistic. There are real differences between the cultures at companies like Apple, H-P, and Silicon Graphics. Some firms may request that you take a drug test, for instance; different companies will have widely varying approaches to everything from internal secrets to dress code, so inform yourself about their policies. It's important to think about the kind of person you are, and the culture of the firms you are applying to. Since your choice may amount to a career decision, it really makes sense to try to figure out the kind of environment you want to work in.

Fortunately, many of the larger firms like Apple and H-P do look for *fit* as well as education and experience. Other smaller firms may not be as sensitive to this issue. The impor-

tant thing is to avoid being insincere and pretending to be a kind of person you're not—the "square peg" syndrome. You're the one getting the job, and you're the one who has to be happy with it.

The Interview From Hell

Everyone has their favorite disaster-interview stories. My finest hour came when interviewing with an international engineering firm with offices in Paris, Milan, London, etc. After successfully convincing their rep of the merits of my stunning credentials, I was temporarily caught speechless when he asked me how I'd like moving to their company's corporate headquarters in Cincinnati. "Ah... not too enthusiastic," I finally replied.

Not only did I crash and burn, I didn't do my homework for that interview. I should have known they were interviewing for jobs in Ohio, and I should have known more than the name of this firm (which is basically all I knew). Interview preparation is really crucial. If a company rep thinks you know nothing about their firm, then you're wasting their time. And unless you're God's gift to engineering, you can expect less than an enthusiastic response. Prepare for an interview by reading a company's annual report, and looking up articles on their products and markets. This information is *readily* available at most libraries.

And In Closing...

It's my firm conviction that *any* person can get a job with *any* high tech firm. I don't care if you formerly worked as a midwife—there are useful things that high tech companies *will pay you to do*. I think that any random cross section of people working in high tech will prove this out—there's an incredibly diverse set of talent in the industry. And let's face it—this diversity provides a lot of the driving force in technology. High tech is about building products for *ordinary people*—not just engineers. The important thing to remember is that the *jobs are out there*. Finding them is mostly a matter of persistence, common sense, making the right contacts, and time. ■

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Stapler. Like a real stapler, the InTouch stapler can staple Name Cards, Notes and Forms together. When you staple two Name Cards together, InTouch remembers the relationship between them (Smith is Wilson's accountant) and generates a network of contacts.



Trays. Trays work just like the In/Out/Pending trays on your desk. You can put Notes and Forms in them. You can create any number of trays for any purpose (In, Pending, Orders to fill, POs awaiting products, Cancelled Quotes, etc.). Trays can be either Private or Public. Private trays are only accessible to their owners. You might have a private "To Do" tray where you keep your Notes on priority items.

Public Trays are available to all users with appropriate security rights. Public Trays are used to move Notes and Forms from user to user. You can generate reports from trays. For example, all of today's shipping invoices could be placed in the "Shipped Today" Public Tray. All authorized users could view the tray or print a report of all the day's shipments.



Check Point Trays. Any tray can be tagged as a "Status Check Point", which means that any form that passes through the tray is time- and date-stamped and will appear on management status reports. You can turn status check points on and off at any time allowing you to focus only on potential trouble areas. You can view the check point audit trail on any individual form so you know who did what and when.



Calendars. Calendars are places to put Forms and Notes, and like a tray, you can have as many Calendars as you like. Calendars can be either Private or Public. Each Calendar has a separate tray for each day until the year 10,000. Calendars might be used for Customer Service follow-up items, Company-Wide Events, or Convention Scheduling.



Product Cards. InTouch lets you keep a Product Card on each product you sell. When you fill in a Product Card you enter stocking levels and prices, and staple on the Vendor's Name Card. Forms can update the product inventory and staple themselves to Product Cards where appropriate. For example, if you're using the Purchase Order form, all POs open for a particular product are automatically stapled to that Product Card. The card would also show "quantity pending receipt" from the appropriate Purchase Order.



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Wordprocessing Document Stapling. Documents created with WordPerfectTM can be Stapled to Name Cards or Notes and moved from tray to tray. You could write a proposal with Word Perfect and attach a note that says "Fred, please review the attached proposal and return it to me." Documents created with your word processing program while using InTouch can be organized by name or keyword automatically.



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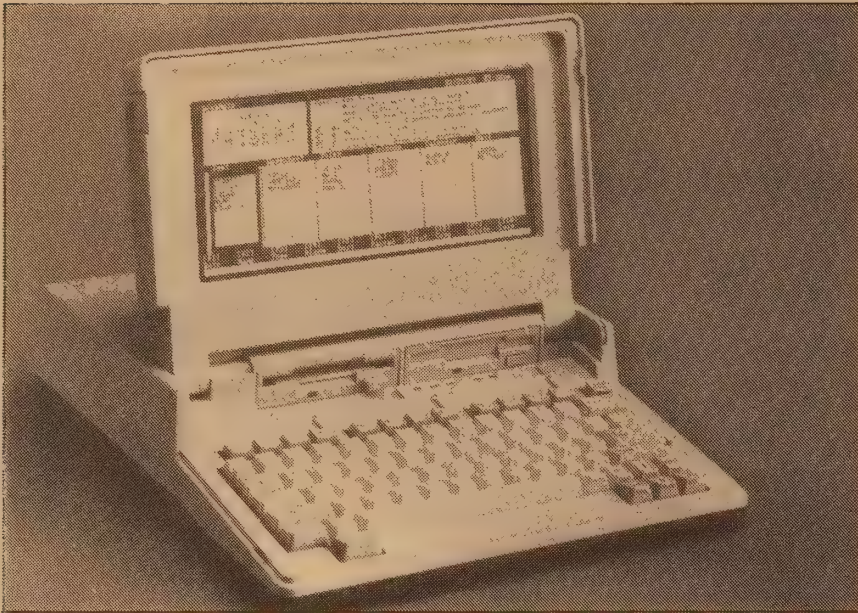
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The Tandy 1400 LT: Affordable PC Compatibility

By Ed Kahn



Tandy's first PC compatible laptop is a real bargain.

With so many powerful laptops coming to market, it is often easy to overlook the lower end products that, while lacking the muscle of the more expensive machines, make up for it in affordability. Tandy revolutionized the computer marketplace years ago with the introduction of the Model 100—a lightweight portable that was the constant traveling companion of journalists and businessmen for years. Perhaps no other computer has enjoyed such a long life. Years after its introduction, the successor to the original Tandy portable is still available at Radio Shack stores.

With its lead in the portable business, it seemed strange that Tandy had never made a PC compatible laptop. They have now rectified that with the introduction of the 1400 LT. Weighing about 14 pounds, this is a bare bones system, but has a lot of built-in features that set it apart from the rest of the crowd.

Features

The system is powered by a V-20 chip, which means it is roughly equivalent to a plain IBM PC. "Roughly equivalent," however, is not quite fair, because this portable will in fact run circles around a standard PC. First, the V-20 chip is faster than the 8088 it

emulates. And second, Tandy has included an option that allows you to operate the unit at either the standard 4.77 MHz or the faster 7.16 MHz. While the original PCs came with limited memory, the Tandy comes with the full 640 K and then some. They have included an additional 128K that is set up as a RAM disk when you start the system. This gives the machine a definite advantage over the competition. Although the RAM disk function is automatically implemented, there is no mention of it in the documentation—an unfortunate oversight. Just what Tandy had in mind for this extra memory is not clear. Although the experienced user can find uses for this extra memory, the novice will probably not even know that it is there.

Make no mistake about it, this is an entry level machine. The unit comes with two built-in 720 K 3.5" floppy drives. Although this is a laptop for those who want basic computing, a number of expansion possibilities exist. Tandy has not yet released its add-in hard disk. For many months, this unit has been in development, and it is possible that by the time you read this, it will be available in the stores. It is expected to carry a list price of \$1199—a bit pricey, but perhaps worth it considering that there are frequent sales at Radio Shack outlets. As I understand it, the hard disk will be sold only as an add-in option. You will purchase it and then have it installed by the local dealer for a few bucks. When you're done, you will have a spare floppy drive on your hands. There seem to be no plans to offer the hard disk as an installed option at the time of purchase.

Tandy has wisely included a clock calendar with a battery in the computer. So many dual floppy disk drive units do not include this feature. It is always inconvenient to have to enter the time and date every time you power up and unless you do so, your files will not show when they were created.

The Tandy 1400 LT packs a lot of

power. The machine is about the size of a small portable typewriter. When you open the unit, the top folds back to reveal a screen and a full feature 76-key keyboard. The layout is conventional with 12 function keys running along the top above the number keys. In addition, there is an embedded numeric keypad, which is invoked by pressing an "Fn" key. Unlike many of the entry level portables, however, you can elect to substitute a full keyboard of your choice. This option makes the computer more appealing to me because the most direct connections we have with our computer are its keyboard and display.

The layout on the 1400 LT is pretty standard for a portable and the feel is way above average. Given the choice, however, I would prefer a keyboard that has a separate numeric keypad and a full set of cursor movement keys. The DataDesk Turbo 101 is worth looking at if you decide to get a full keyboard for this or any other computer.

The display on the Tandy laptop is likewise as good as any you will find in this price range. It features a backlit screen that is extremely readable. It has blue letters on a silver background. A contrast wheel on the side of the computer allows you to adjust the display for maximum legibility. While some expensive portables have VGA and black on white displays, the Tandy screen rivals the NEC and Toshiba laptops offering roughly the same features and screen size. The computer can accommodate an exterior color monitor if you want to hook up to a full size color display when not using the computer as a portable. The trouble with this, however, is that it only supports CGA. I find this resolution completely unacceptable for serious work with text. On the other hand, I know that in the early days of PC computers many people routinely used CGA color monitors until standards with higher resolution were introduced. For myself, I always stuck with monochrome until EGA was introduced and would have no

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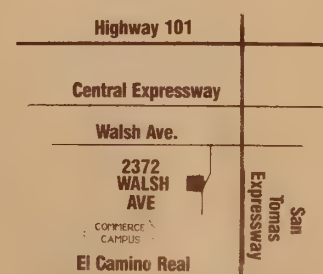
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trouble working with the LCD backlit screen that comes with the 1400 LT.

Tandy offers a 1200 baud modem (\$199.95) that is easily installed by the user. There is also a serial port built into the computer so if you want a faster modem you could attach it to the serial port. Tandy has designed the internal modem with a feature not commonly found—you can either connect the modem in the conventional manner by using a line between the modem and the phone outlet in the room or you can use their acoustic coupler (\$59.95) that plugs into the modem with a special plug and allows you to send files through a telephone handset.

The 1400 LT comes with a simple setup program that lets you easily configure this and other options. Unlike most other laptops, however, Tandy has designed this computer to only handle one serial channel. So if you install an internal modem, you cannot use the serial port unless you select it rather than the modem in the setup options. If you require a mouse,

you will have to choose between the mouse and the modem by switching back and forth through setup. It is easy to reconfigure the system with the setup option. In addition to the serial port, there is a printer port.

Tandy has a wide range of accessories available for the computer. In addition to the modem, they offer a numeric coprocessor (\$250) that must be installed by a dealer. There is a 5.25" disk drive (\$249) available that attaches to the computer through a port provided on the back. I did not try out this drive, but knowing the high standards of Tandy, have no doubt that it works well. And of course Tandy has a well designed carrying case (\$39.95) for this computer.

The computer comes with both a battery pack and a power supply that allows you to recharge the battery or power the system from an AC source. Extra batteries are available for \$79.95. The battery pack will power the system for three to four hours, depending upon your application. Obviously, the more you access the

disk drives and use the modem the shorter time the battery will last. Recharges unfortunately take between 15 and 20 hours. The ratio between recharge time and length of battery service is not as good as with some other portables. But if you only occasionally use this computer away from an AC power supply, there should be no problem.

The system comes with documentation, which takes you step by step through getting started for the first time. The included booklet is concise and clear. It does not weigh you down with technical explanations, but provides all the information you need. The computer includes MS-DOS 3.2 as well as GW-BASIC. The system is backed by a 90-day warranty, which should be honored at any of the Radio Shack stores.

Conclusions

On balance, I am impressed by the LT 1400. The basic unit, while listing for \$1799, has been on sale for as low as \$1299. Some of the accessories are a

good deal less expensive than those available for competing computers. But if you want a computer with a hard disk, this unit becomes too expensive unless Radio Shack has a sale on the drive as well as the computer itself. If you buy this unit, you will be pleased with its performance and can be sure that Tandy will support the unit for many years. ■

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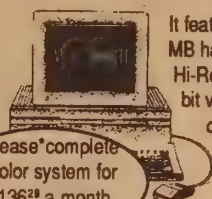
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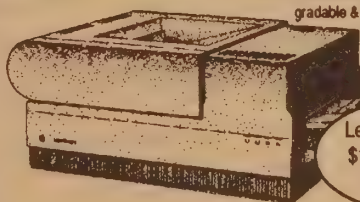
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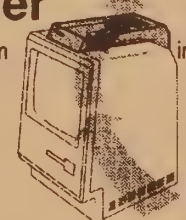
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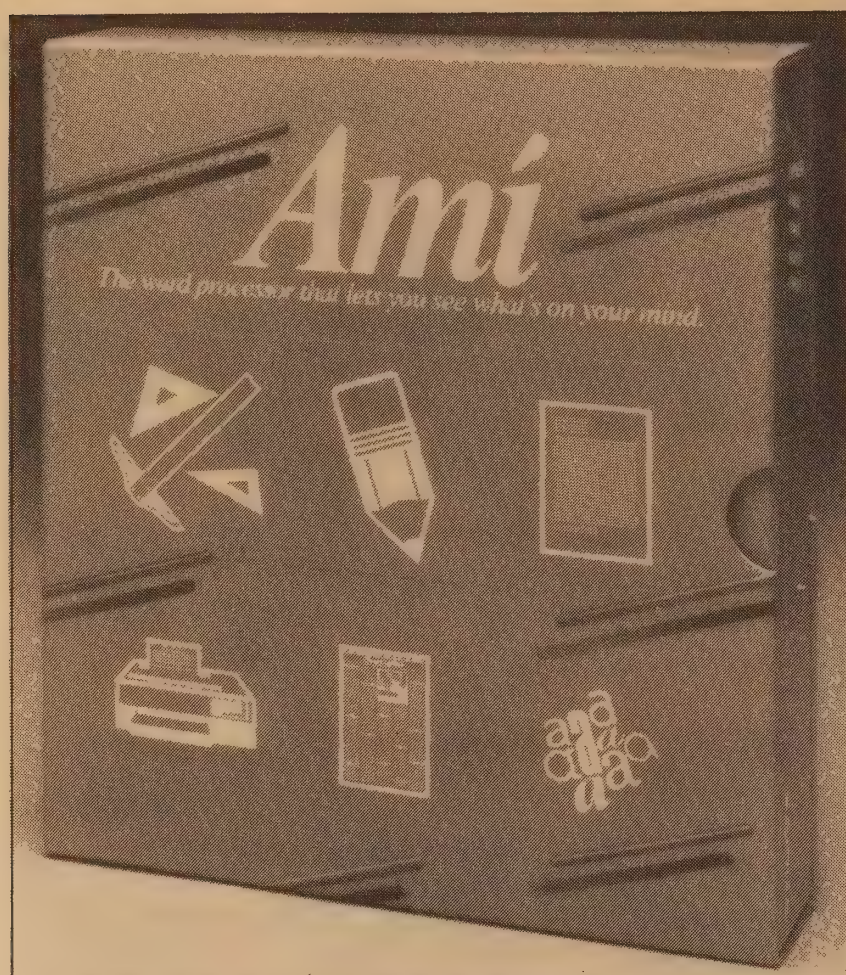
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Samna's new Windows-based word processor, Ami.

With Samna's new word processor, *Ami*, we begin to see the promise of *Windows* realized. In its current version, *Ami* is a reasonably full-featured word processor which runs under Microsoft *Windows*. The professional full-featured everything-is-there version of the program is due out sometime this year and, if it keeps the speed and ease of use of the current *Ami*, it is sure to be a winner.

Working With Ami

Ami is comparatively easy to use, since it follows *Windows* conventions. Everything you expect will be in the pull-down menu.

If you have done much word processing with the other *Windows* word processors, you will like *Ami*'s speed and lack of crashing bugs. If you are used to a text-based word processor like *Word*, *WordStar*, or *WordPerfect*, you might just fall in love. *Ami*, through the *Windows* graphical interface, shows you proportionally spaced text, on screen, just as it will appear when it finally makes it to your paper.

Ami also handles graphics with aplomb. You can insert TIFF and PCX based files anywhere in your document, move and size them as needed, and generally do much of the manipulation that you might expect from a

Ami Version 1.0

Windows Ease Of Use Meets Multi-Featured Word Processing

By Woody Liswood

desktop publishing package.

Ami's ease of use and apparent simplicity come from two concepts you'll need to master when you move to the *Windows* environment: frames and styles. A frame is a space where you can put graphics and text. In one sense, the entire document is a frame. However, you can have a multitude of frames, each containing text or graphics, and manipulate them together or separately. For example, you might have a frame which contains a graphic you created with *Arts & Letters*. After creating a frame for that graphic to reside in, you have the option of having the text appear to the right of the graphic, the left, both sides, top and bottom only, or even underneath the graphic. Or, conversely, you can have the graphic transparent to show the text underneath or opaque to hide what is underneath. The possibilities are limited only by your imagination.

Style

The style functions of *Ami* are very intuitive, and give you tremendous ability to easily size and shape every piece of text within the document. In fact, *Ami* includes a number of predetermined styles for a lot of popular situations. You have default styles for four different types of letters, five different memoranda, four reports, five overhead transparencies, three newsletters, three proposals, a press release, and a book—handbook or manual. These styles are so powerful and so flexible that they give the program significant ease of use, as well as many features which can be used with the click of a mouse button under *Ami* but would require multitudes of dot commands and other hassles under *WordStar*.

A "style" determines the font, color, text alignment on the page, spacing between lines and paragraphs, breaks, special effects such as bullets and indents, types of lines, sizes and placement of lines, and whether hyphenation is used or not on a particular text block.

You can have as many styles as you need in each document; you can also create and modify a default style sheet for use in all documents when you finally get your perfect style sheet created.

When you first create a style, you are shown the font menu. You will find all of the available fonts listed for your currently selected printer. (*Ami* uses the *Windows* printer driver and does not contain any of its own.) Along with the font list you can select the available sizes, as well as color and what *Ami* calls attributes: bold, italic, all caps, underline, or normal text. (You can assign the same font characteristics to just a single word if you wish, without creating a style for it.)

Next you select an alignment. I found *Ami*'s handling of alignment the easiest and most intuitive method for formatting indents and outdents of any other word processor I've worked with. Your text can be left-justified, right-justified, centered, or left- and right-justified. *Ami* shows a sample page and changes the alignments on the sample page as you make changes in the menu to show you what the results of those changes will be. Also, you can select the indentation for the first line of a paragraph separately from the rest of the body of the paragraph. That means you can outdent the first line and indent the rest of the paragraph.

There are three arrow boxes for the indentation, one for all of the paragraph, one for the first line, and one for the rest of the paragraph. If you click on the up arrow, the indentation changes in the box. If you need to shorten the indentation, click on the down arrow. As you move the indentation, the sample page changes with you and shows you the results of the change in real time. Fantastic, you say? You're right.

Next on the menu is the spacing. Here you set the spacing between lines and between paragraphs of text. As with indentation, a sample set of text shows you the results of making

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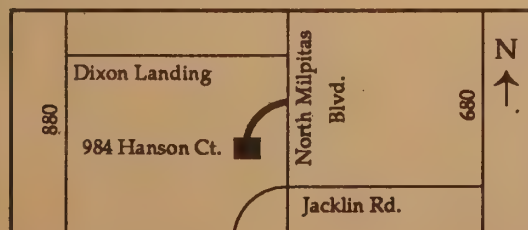
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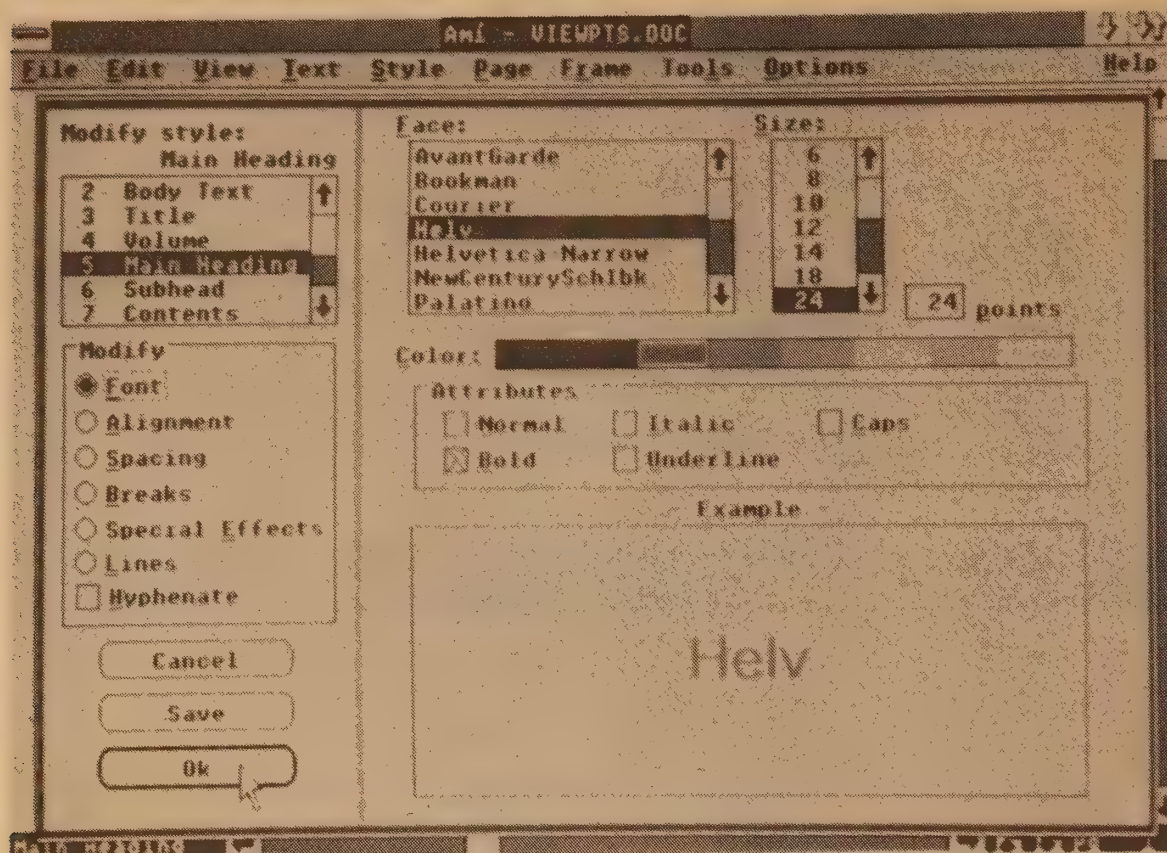
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Ami not only lets you make formatting changes in a dialog box, it shows you the results of those changes in the Example box.

changes. I have used this feature to get more text on a page when I had a two-line orphan which I wanted to get back on the page. I started reducing spacing between the lines in a paragraph until the two orphan lines were pulled back on the original page. The resulting condensation of the text is not noticeable to the casual reader—at least no one who I showed it to could tell that I had done it, even after I told them what to look for in the document.

The break section of the style menu lets you put page breaks only before paragraphs, after paragraphs, or will allow you to have a page break within a paragraph.

The special effects style section was my main love. There I can, and did, create bullets and tabs after bullets. Since I produce a wide variety of reports, the automatic bulleting feature, along with the indentation, has made *Ami* my word processor of choice for all but mail merge activities. It would be nice if the next version also had a dot leader for tabs.

Ami can work with lines in text mode as well. You can have a line above or below each paragraph, and control the spacing, length, width, and color of the line.

If you select the hyphenation option, *Ami* will not allow more than two consecutive lines to be hyphenated. You can, when keying in your text, insert a discretionary hyphen with a ^+.

Styles are easy to use. If you are entering text, select the style you want

to use from your style menu; it stays in effect until you change to another style. If you are editing, moving the cursor within a paragraph and selecting a style from the style pull-down menu will cause that entire paragraph to adopt the new style.

If you are working with single words or paragraphs and don't want to create special styles for them, you can do almost anything to a single word with just the click of a mouse button or two. That includes special effects, alignments, fonts, spacing, and font selection.

Special Features

Ami has adopted an interesting convention to keep text flowing as fast as you can type. The other *Windows*-based word processors all suffer from extreme slowness. *Legend*, which offers more features than *Ami*, puts me to sleep on my 20 MHz 386.

Ami has two different modes of text entry. You can enter text in a text only mode, which accepts text as fast as you can type it. It shows special effects such as bold by changing the text to red; it shows carriage returns and tabs, but does not show automatic page breaks. With the click of a button, however, *Ami* switches to the graphic mode, which shows you the WYSIWYG text, outlines the text area with blue to show the margins, and shows true proportionally spaced type on screen.

There are also some special views for detail work. In addition to the working page, you can have a full

page, which shows what the text will look like on a full page, but may be unreadable; a standard page, which is the same size as other *Windows* applications (I found this view mostly useless since I had to scroll back and forth to see both ends of the line—also one of my main complaints with *Legend*); and enlarged, which zooms in on a section of a page so that you can see the fine details.

You will really like the mouse as you use *Ami*. Once text is in, you select a single character to an entire paragraph or page by holding the left button down and dragging the mouse cursor over the text. Once it's selected, you can do almost anything to that block of text. But if you are a true touch typist, all of *Ami*'s functions can be performed without a mouse, and many of the mnemonics are easy to remember, such as a ^B for bold facing type. With the keyboard, you hold down the shift key and use the arrow keys to drag the cursor to identify the text block.

Erasing, cutting, and deleting text are all there, and so is undo. Yes, you can undo the last word you deleted by accident, or use undo for a quick cut and paste.

Search and replace works through the pull-down menu system. There is no search by itself. *Ami* assumes you are going to search and replace, but if you don't put anything in the replace section, *Ami* finds what you want without changing it. You can search for any particular text item or go to a specific style. When searching, you

can specify with whole words and/or exact case matches. And, as with other word processors, you can change a single occurrence of the word or all occurrences in the file.

There is a reasonable 130,000 word dictionary built into *Ami*. With this version there is no Thesaurus. *Ami* will create your own personal dictionary, but does not allow you to have multitudes of dictionaries for special purposes.

Printing is done through the *Windows* drivers. If you select more than one copy, that many copies of each page are printed before going to the next page. If you're using graphics and laser printers, this will really speed up the process. You can print all pages or a specific range. And you can print in reverse order if you have an older laser printer.

Graphics And Formatting

When you create a frame to hold graphics or text, you position its frame on the document where you want it. Then you can size and move the frame as needed. If there is a graphic imported into the frame, you can scale the graphic to fit in the frame as shown, or you can have the graphic full-size behind the frame, and only show the part you want by sizing the frame or moving the graphic to show through the frame window. The default value for a frame is to print a border; it can be turned off if you wish to have a frame without a border.

I did this when I imported my business card logo. I had the logo in *Freelance Plus 3.0*. I output it as a TIFF file, created a frame to hold it in *Ami*, imported it as a TIFF file, and moved the frame to where I wanted the logo to show. Then I moved the image behind the frame to show in that window. Last, I eliminated the border from the frame, then saved the entire document as a new style with an included graphic. Now, when I do a business letter, I select that style as my default style and it automatically prints my letterhead on the first page of the document.

Ami imports text from a few of the popular word processors. Supported in this version are ASCII, *SAMNA Word*, *WordStar 2000*, and *WordPerfect 5.0*. Graphic imports are PCX and TIFF only.

Ami allows variables, such as page numbering and today's date or the system date, to be put in the document. However, here is one of *Ami*'s few anomalies. Page numbering starts with one on the first page of the docu-

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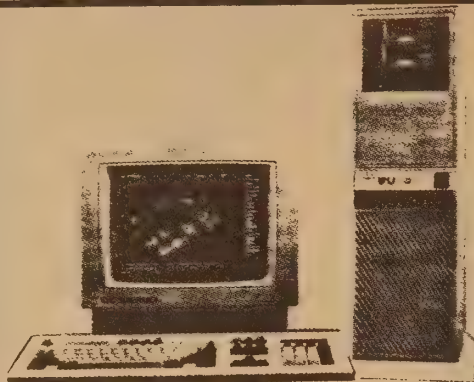
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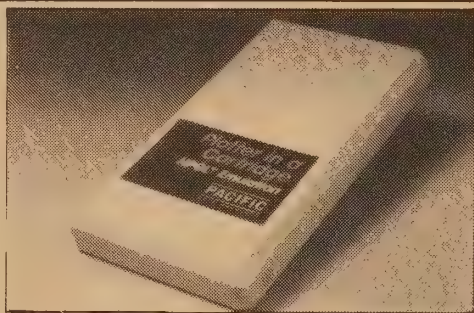
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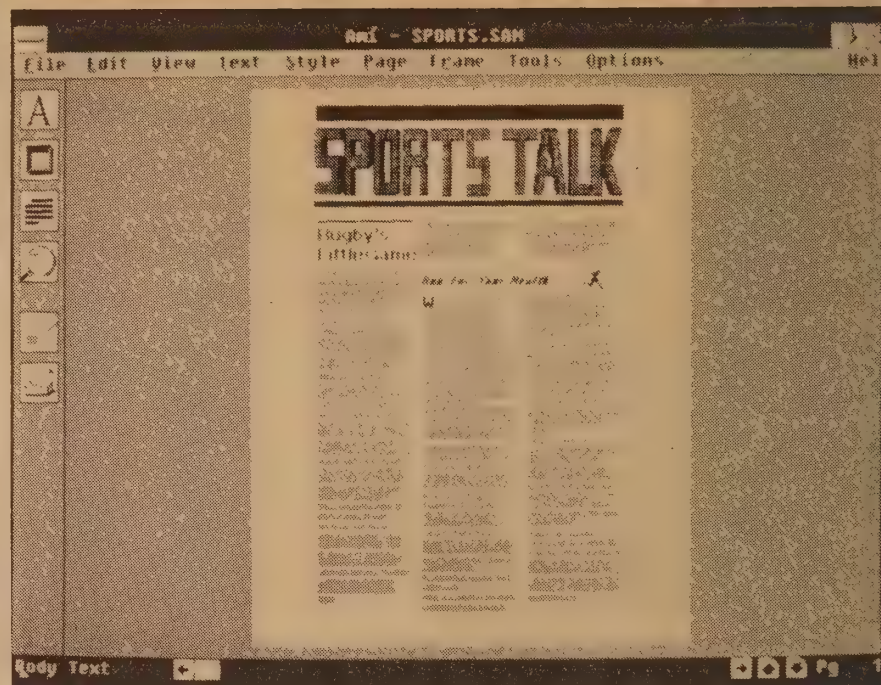
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R E V I E W S



Ami lets you view your document in several ways, including full page.

ment. Period. You cannot start with page number 1 on page number 2. You can start page numbering on page number 2, but it will *always* read 2.

There are reasonable header and footers available. You can only use one header or footer in a document.

Lastly, *Ami* does columns. You can have newspaper style columns with good control over margins and gutters.

Almost A Rave, But...

Now for the problems.

I could not crash *Ami* with normal use. However, I decided to see how big a document I could get into *Ami*, since it is an in-memory system. I was running *Windows 386* on a 2 Mb 386 box. I was able to get about 150 pages. However, I found that working and editing around the end of these large documents causes unexpected crashes. I don't think I would use *Ami* for any document over 50-75 pages.

I previously mentioned the page number problem. You should be able to start and stop page numbering anywhere in the document using any number you wish.

There should be table of contents and index functions, which are not included with this version. There should be a thesaurus, as well as database and mail merge functions built in, as there are in *WordStar Professional* and *2000*. There should also be a macro facility for commonly used commands, terms, paragraphs, and whatnot.

There is a ruler line, but there is no cursor position shown on the ruler lines—an unfortunate omission for a

WYSIWYG word processor. There is no automatic ASCII print-to-disk function in *Ami*. You can do it through *Windows*, but the *Windows* ASCII driver does not always work properly. If you send and receive documents via modem, you need a way to make an *Ami* document into a pure ASCII text document with no page feeds at all.

Ami also needs a Select All feature. You can select a page of text with the mouse, but if you wanted to change a rather large document to a new font, you would have to modify each style separately to get the new fonts rather than do a select all and change everything at once.

Ami does show you the page number you are working on, but does not display the line or the position of the cursor. That is really a necessary feature, especially for a WYSIWYG program.

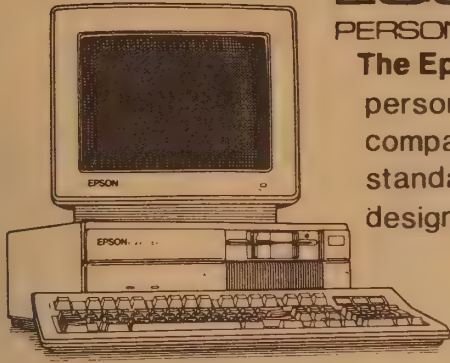
And, lastly, *Ami* should support more graphics formats than just PCX and TIFF.

I've Switched To Ami

Now, with that off my chest, I must confess that *Ami* is so easy to use, does so much, so easily, so quickly, that I have switched all of my word processing activities to it. *Ami*, along with *Arts & Letters*, may be a good reason for you to switch to *Windows*. If you do, *Ami* will not let you down. (SAMNA Corporation, Inc., 5600 Glenridge Drive, Atlanta, GA 30342, 1-800-831-9679.) ■

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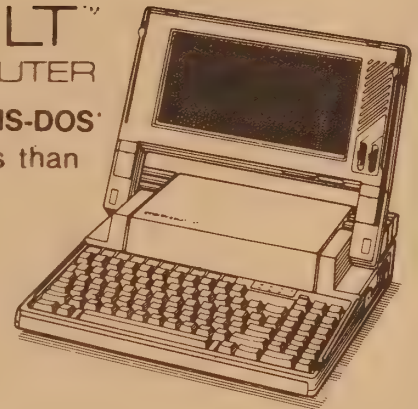
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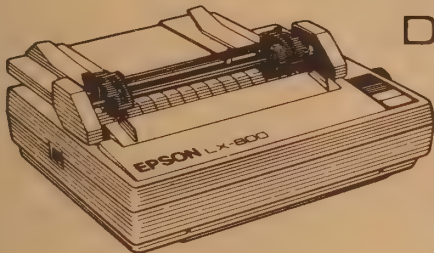
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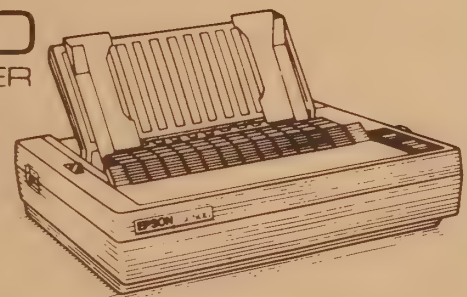


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Command Post

Menu-Driven Directory Management Under Windows

By Woody Liswood

Are you moving over to the *Windows* environment? While all that graphic element stuff is nice, you may be distressed to learn that there's no batch file facility under *Windows*, as there is with MS/PC-DOS. Under *Windows*, sophisticated DOS shells like *1dir Plus* won't be able to take care of all your file management and program needs.

You do have the ability to load and run programs as icons and to select the program which appears when you boot *Windows*. What's missing is the ability to boot *Windows* and go from the boot screen directly to the proper subdirectory to run a program. (Of course, you could put all of your programs into the *Windows* directory, but you would have to find the program and double click it to get it to run. Not at all elegant. And then if you have 20 Mb of memory, and have loaded everything you own under *Windows* as a separate icon using the WIN.INI file, and it all works for you, then don't read on.)

However, if you would like to choose your application from a menu, *Command Post* will simplify your computer life. If you are an applications designer worrying about guiding your users when you're not around, *Command Post* may be a life-saver. If you are lazy, like I am, and just want to automate the process as much as possible, then *Command Post* is really something you want to pick up.

Command Post modifies the *Windows* command menu to add many more pull-down menus. Each of the pull-down menus can contain programs you wish to run, or events which you might want to happen. The look is original *Windows*, but you may now have a two- or three-line command menu across the top of your screen, rather than the single-line

Command Post modifies the *Windows* command menu to add many more pull-down menus. Each of the pull-down menus can contain programs you wish to run, or events which you might want to happen.

menu with the three items of the DOS executive.

Command Post works through a single ASCII file, which can be created and modified using the *Windows* Notepad or any other ASCII editor you desire.

The rules for constructing this file are rather simple. You build your

menu structure in an indented outline format. Any word which starts in the far left column will become a menu item in the command menu. Words which start in column two will become menu items in the pull-down menu. Under this scenario, the next two indented lines show, first, the path to find the program you want to run, and next the full name and extension of the program you are running.

An & in front of a letter will cause that letter to be underlined in the command menu; you can boot that item by keying the underlined letter.

Within the menu structure, you can also have parameter defaults set so that you can always call up a specific document or file when you start a program; or you can have *Command Post* query you for the file name.

The main command menu contains a nice feature—you can instantly reload a new menu structure as you are working on it. I designed my structure using the Notepad, saving as I went along, designing and testing the structure I was creating.

When *Command Post* loads, it also shows you the time and memory usage in a box located under the main *Window* command screen. And, lastly, *Command Post* includes a screen saver function, so that if you leave your computer unattended for a certain length of time, the screen will go blank to preserve your VDT.

You cannot purchase *Command Post* at your local computer store. It is shareware, and you will need to find a bulletin board from which to download the ARC file. I got my copy from CompuServe in the MSAPP section under the WINDOWS library. (*Command Post* is also available from its publisher, Wilson WindowWare, 3377 59th SW, Seattle, WA 98116.) ■

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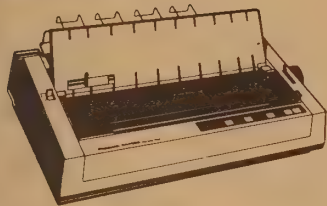
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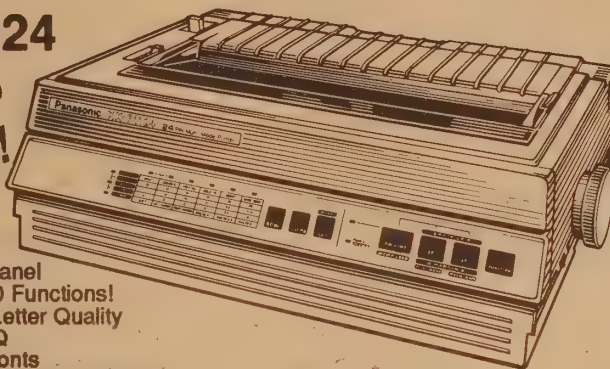


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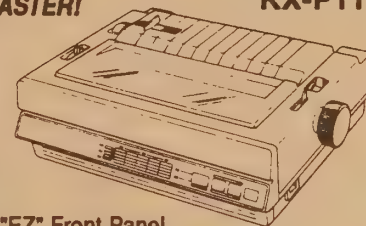


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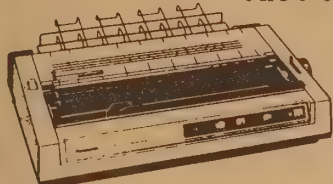
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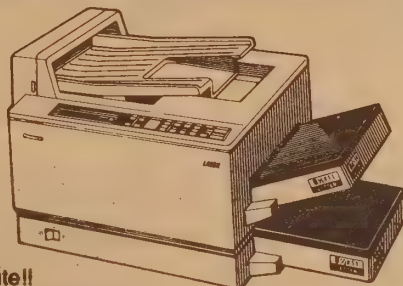
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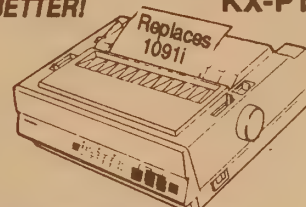
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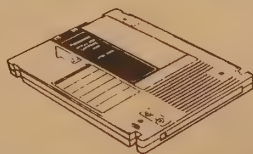
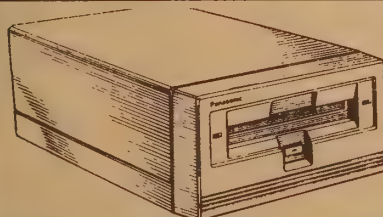
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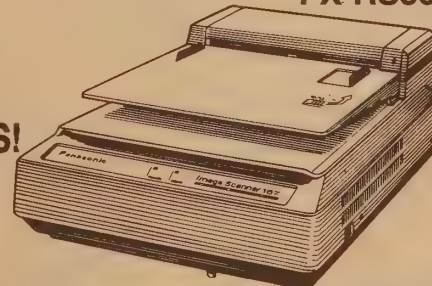
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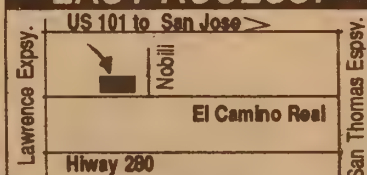
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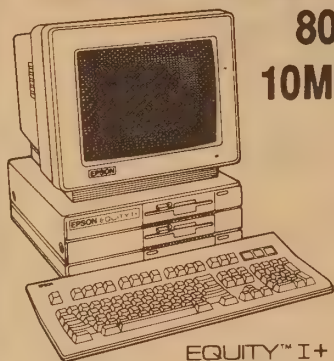
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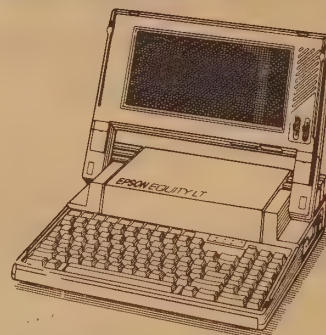
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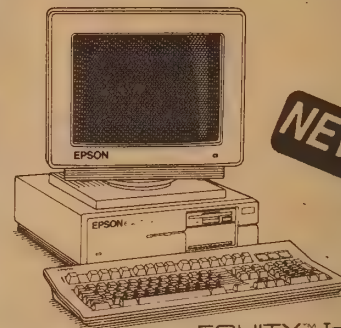
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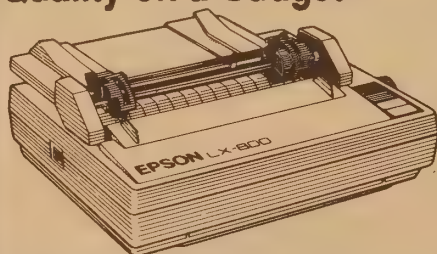
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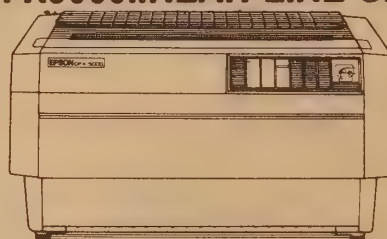
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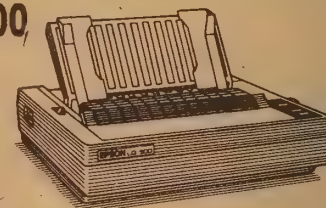


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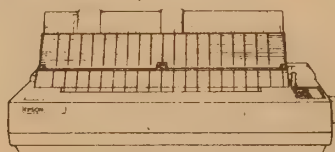
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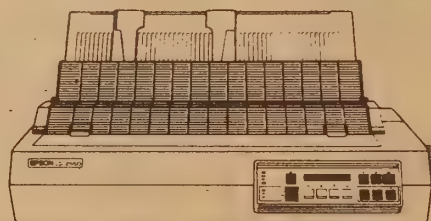
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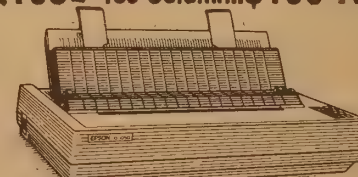
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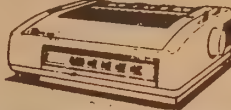


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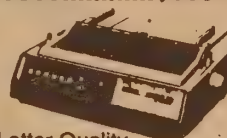
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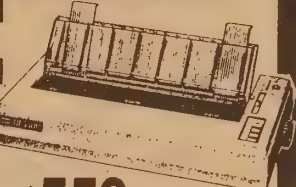
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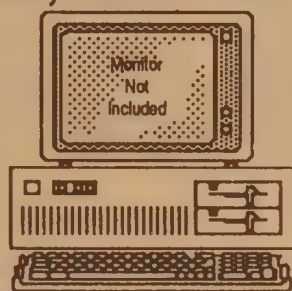
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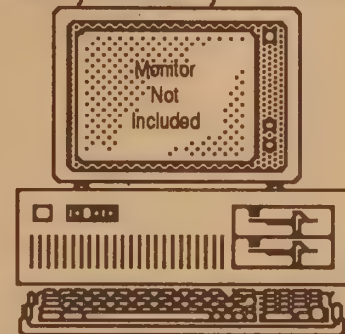
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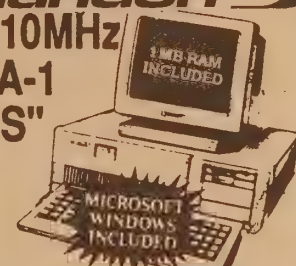


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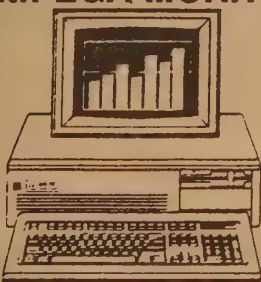
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with EGA MONITOR**



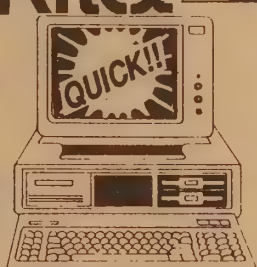
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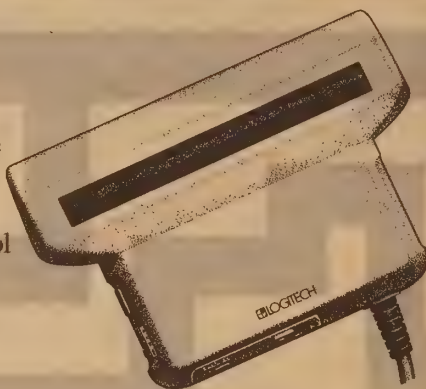
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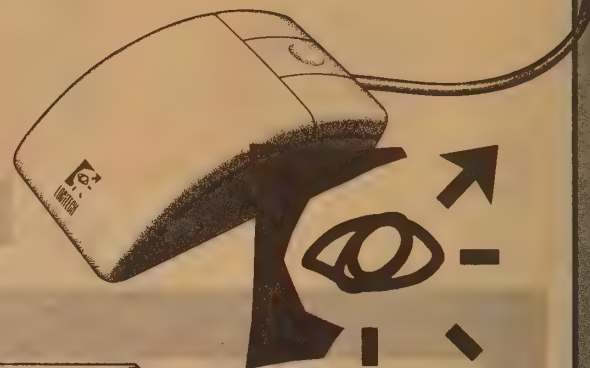
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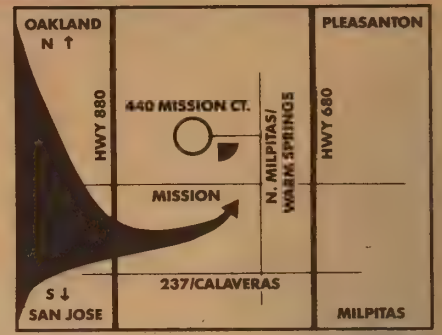
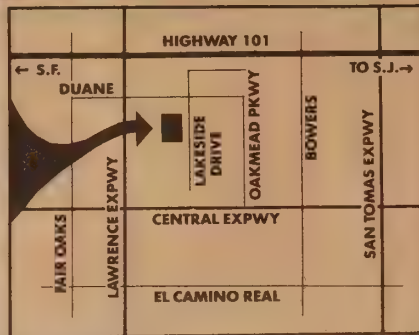
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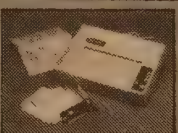
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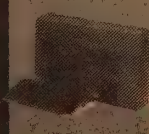
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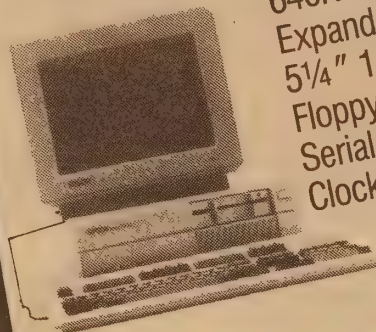
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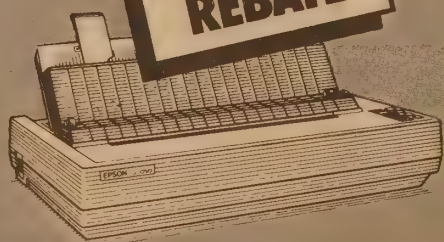
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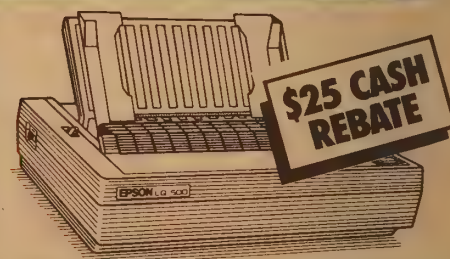
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- Selectype Font Control Panel
- One Year Limited Warranty

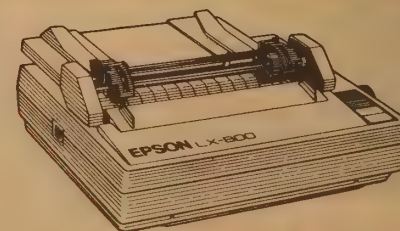


\$274*

*After \$25 Rebate Instore Cost \$299

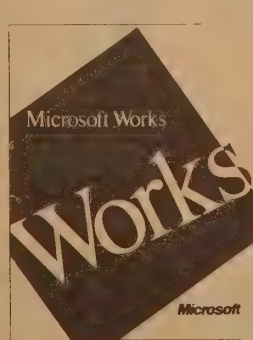
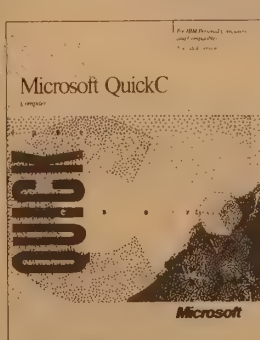
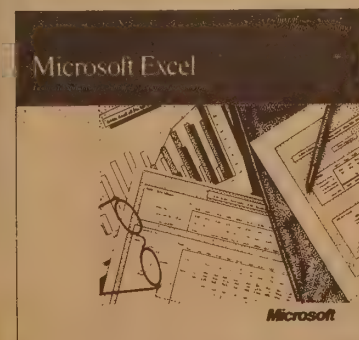
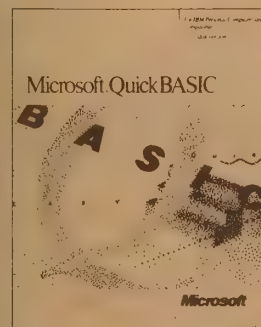
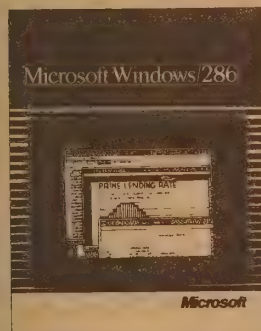
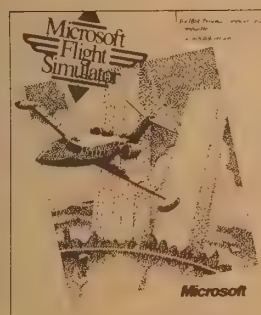
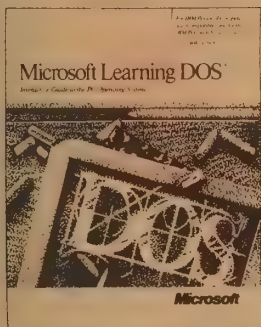
LX-800

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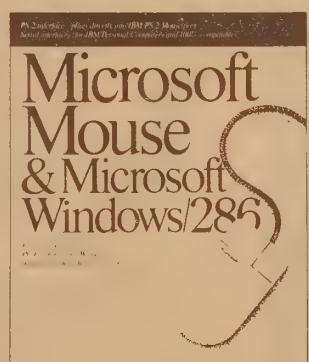
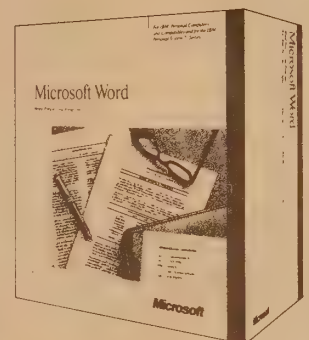
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Microsoft Excel	229	269
Microsoft QuickBASIC	69 ⁹⁵	69 ⁹⁵
Microsoft Quick C	69 ⁹⁵	—
Microsoft Works	109 ⁹⁵	198
Microsoft PowerPoint	—	279
Microsoft Windows/286	69 ⁹⁵	—
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Microsoft Flight Simulator	34 ⁹⁵	34 ⁹⁵
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Entry form and complete rules available at participating Microsoft dealers until April 30, 1989.

The following prizes will be awarded in a random drawing on or about May 31, 1989: (1) Grand Prize - \$50,000 cash; (1) First prize - a computer system and software up to a maximum suggested retail value of \$20,000; (10) Second prizes - up to seven Microsoft products, total suggested retail value not to exceed \$3,000; (100) Third prizes - a Microsoft Flight Simulator or Learning DOS, suggested retail value \$49.95.

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*One prize per household. Microsoft, the Microsoft logo and PowerPoint are registered trademarks of Microsoft Corp.

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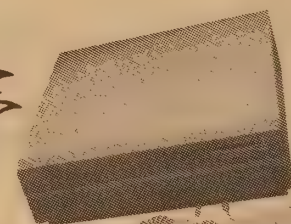
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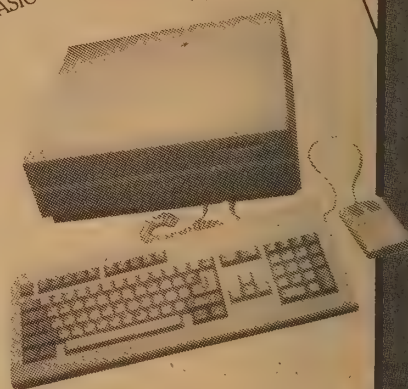


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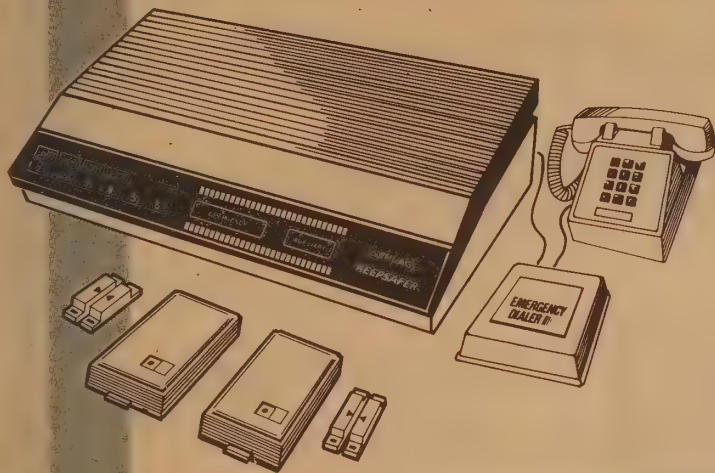
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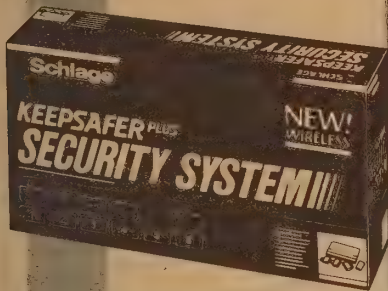


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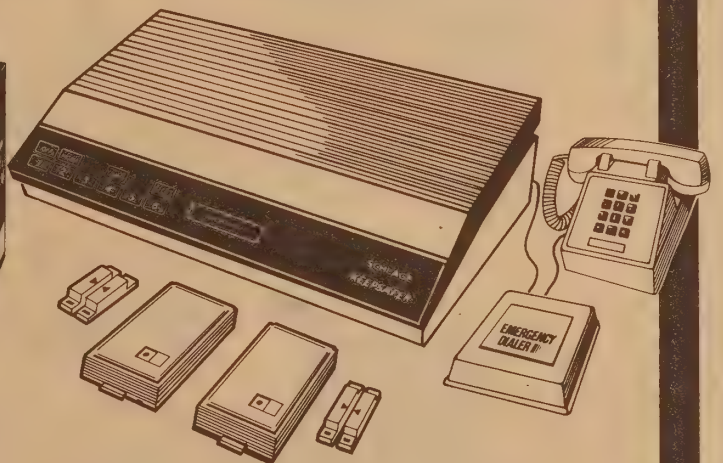
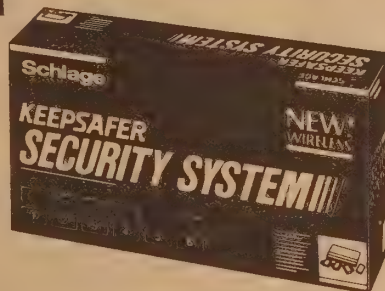
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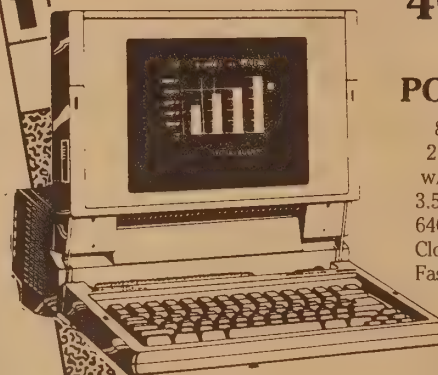
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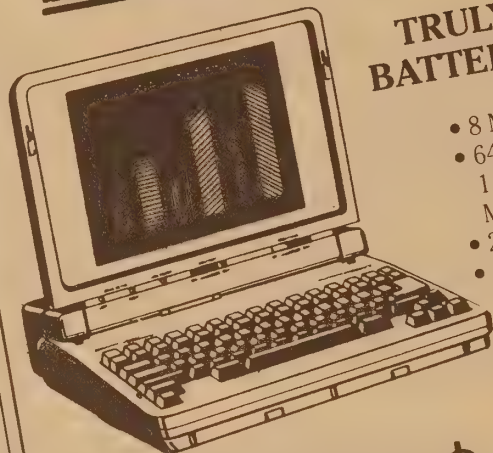
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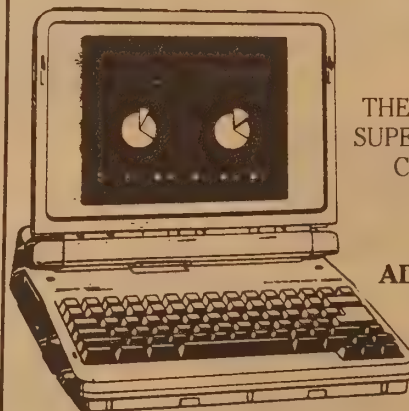
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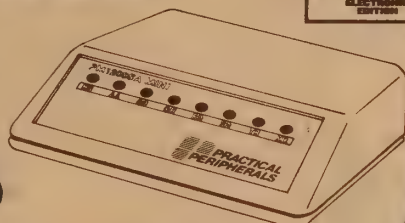
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Stand-Alone Modem
100% Hayes Compatible

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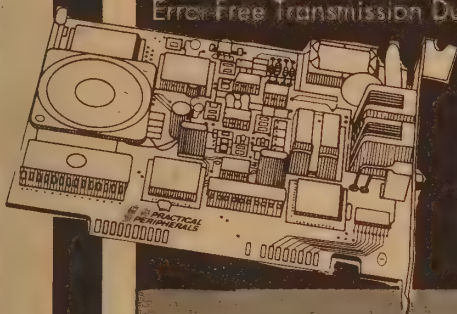


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100% Hayes Compatible • Pro Com Software

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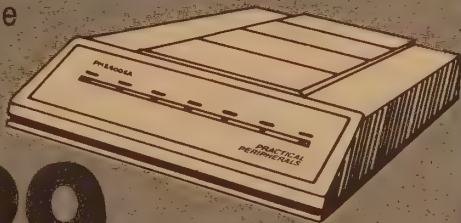


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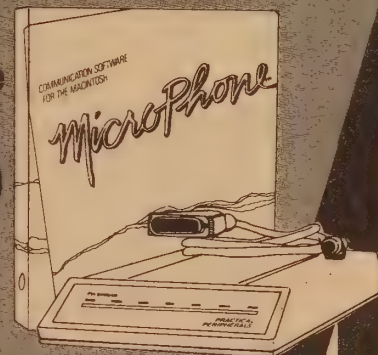
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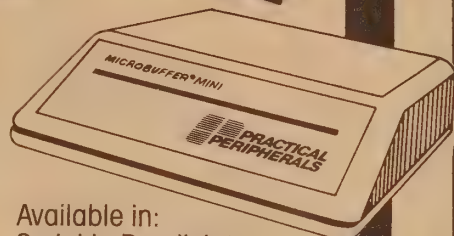
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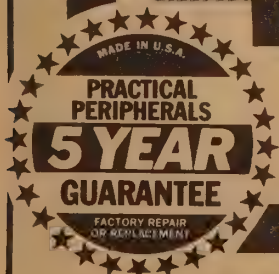
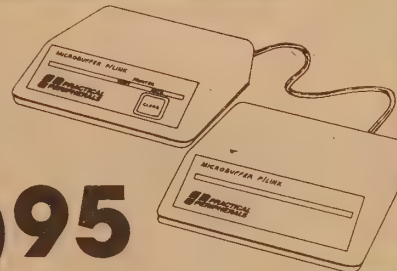
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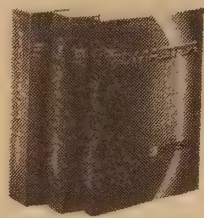
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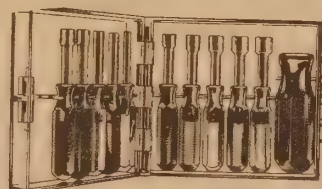
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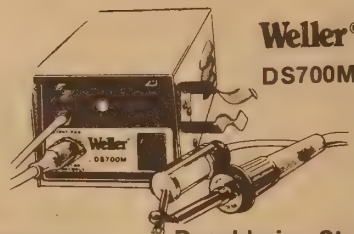
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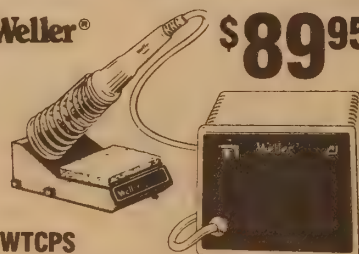
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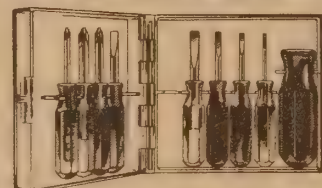
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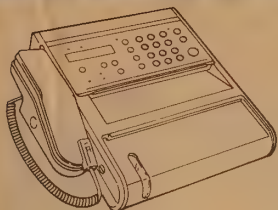


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0.1% basic dc accuracy
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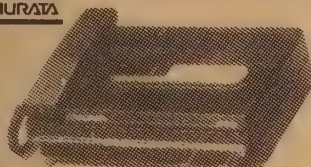
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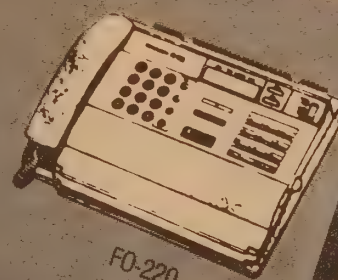
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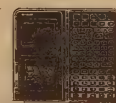


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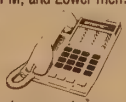
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- Display deny feature for secret telephone numbers



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- Switchable tone and pulse settings for compatibility with tone-accessed long distance services and other tone-actuated computer systems



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Mitac Paragon 286 VE: Compact And Powerful

By David W. Batterson



The Mitac 286 VE offers great performance without hogging your desktop.

Some time ago when I had an Apple IIc, I needed an external floppy drive but didn't want to pay Apple's inflated prices. So I bought one made by Mitac. It served me well until I left the Apple orchard behind for the MS-DOS world.

Mitac also moved ahead. It began making XT and AT compatibles for other companies in 1982. Only recently did it start selling its ATs and 386s under the Mitac label.

Although it now also produces a 386 tower PC, and a fully-licensed IBM PS/2-compatible, it has had good success with its Paragon series of small-footprint AT clones.

The unit I chose for review is the Paragon 286VE, with 16 MHz, on-board video adapter (Paradise Plus VGA), and a 40 Mb hard drive. Standard RAM is 1 Mb. There are two serial ports (a 25-pin and 9-pin) and one parallel. And even with the compact size, there are six expansion slots (one half-size and five full-size).

The Mitac comes with MS-DOS 3.30A and GW-BASIC version 3.22, along with complete manuals for each. It's also compatible with OS/2. There's the usual socket for an 80287

I like the 286VE very much. The 16 MHz CPU, 0-wait state, BIOS going through Shadow RAM, and the peppy hard disk all work in combination to provide blazing speed and performance.

math co-processor. Mitac supports LIM EMS (Lotus/Intel/Microsoft Expanded Memory Specification) 4.0; onboard RAM can be increased up to 8 Mb. It has that totally reliable workhorse: a Phoenix BIOS.

First a word about the hard drive. It's a 3 1/2" drive manufactured by Conner Peripherals: the CP-342. Although rated at 40 Mb, the formatted drive came up with about 42.7 Mb. The average access time is 29 ms, with a 1-to-1 interleave.

I was extremely pleased with the quietness of this drive. I spoke to a technical representative from the company at COMDEX/Fall, and he told me that their drives are the quietest in the industry. It is definitely quieter than Seagate and MiniScribe drives I've tested. You particularly notice the difference when you boot or turn off the Paragon 286VE.

The CP-342 drive features automatic error correction. It also performs an automatic diagnostics rou-

tine at start-up time. This hard drive is Grade A all the way, and I applaud Conner Peripherals for a fine product.

The Paragon 286VE comes with both 1.2 Mb 5 1/4" and 1.44 Mb 3 1/2" floppy drives. The 5 1/4" drive is supplied by Mitsubishi. The 3 1/2" drive, made by Alps, is mounted vertically to save space. A problem with the vertical array is that to insert or remove a 3 1/2" disk, you have to move the keyboard out of the way. So that's a bit of an irritation.

There is space for an additional 5 1/4" drive. There's also an optional 60 Mb tape backup. Dimensions for the CPU unit are 14 3/4" X 16 1/2" X 6". Power supply is an adequate 145 watts. A real-time clock with battery backup is standard equipment.

The power switch is conveniently located on the front panel, next to the reset button. There's a light to indicate 16 MHz mode. You vary the speed between 16 MHz and 8 MHz by pressing the <Ctrl> <Alt> <\> combi-

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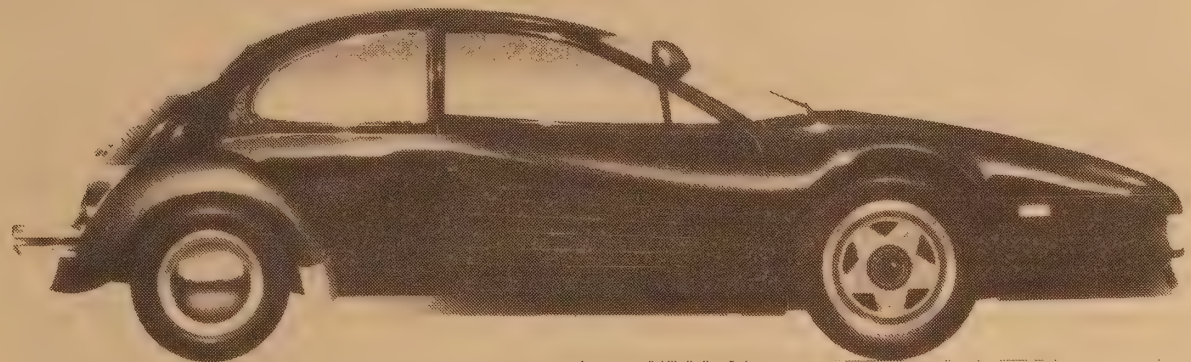
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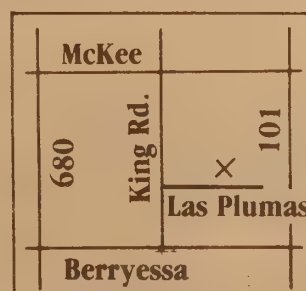
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nation. You then receive an audible signal—two beeps for 16 MHz and four for 8 MHz mode.

The Paradise VGA Plus card can be configured in other ways than the default VGA mode. If you have an NEC MultiSync (or compatible) monitor, it will support 800 X 600 graphics resolution in 16 colors. Otherwise, the resolution is 640 X 480 with 16 colors or b&w, and 320 X 200 with 256 colors or 64 shades of gray.

It also supports EGA, CGA, MDA, Hercules, Plantronics, and 43 line/132 column text modes. You can change these using the VGAPLUS.EXE program. There's also a video test program and ROMCHECK.COM to check the system BIOS date (this one was dated 7/30/87).

The VGA monitor supplied was a 13" Tatung CM-1496, analog type, with .31 mm dot pitch. Besides color mode, a switch lets you select amber, green, or blue display. After many hours of use, I suffered no eyestrain. However, the monitor swivels but

Software just cooks on this machine! The compact size saves valuable desk space.

doesn't tilt.

The Mitac also has a digital port in the event you wish to use a digital VGA monitor. Note: you cannot use both ports. If you wish to connect a second monitor, a second video adapter is required.

Mitac's enhanced 101-key keyboard is acceptable, but doesn't deserve any awards. It doesn't have the click-tactile feel I prefer, like Northgate's OmniKey/102 keyboard. But many users, including Compaq owners, like the soft keyboards. The keyboard port is in front for easy access.

The operations manual is useful and complete. However, I noticed a couple of mistakes. On page 3-8, it mentions that you clear the screen using the <Ctrl> <Home> key combi-

nation. This is true only while using GW-BASIC; it is not an MS-DOS command. The correct command, of course, is CLS. On page 13 of the ERRATA booklet, it states "FORMAT C:\S\V." This should be "FORMAT C:/S/V" instead.

The Mitac comes with the Advanced Disk Manager (ADM) utility program. This allows you to customize a hard disk installation. You can create up to 16 partitions, and can assign passwords for hard disk access. ADM also lets you extend the hard disk space beyond DOS' usable 32 Mb limit, up to 512 Mb!

Shadow RAM is enabled at the factory. This executes the system and video BIOS through RAM (the 640 K-1 Mb area), providing increased speed. You can disable Shadow RAM

if you prefer. By using the ADM utility, you can permit your software to access that extra 384 K as Extended memory. In some cases, this may be preferable to using the Shadow RAM feature. I like the 286VE very much. The 16 MHz CPU, 0-wait state, BIOS going through Shadow RAM, and the peppy hard disk all work in combination to provide blazing speed and performance. Software just cooks on this machine! The compact size saves valuable desk space.

I think Mitac will find a ready market for these PCs. This review unit had a suggested list of around \$2700 (monitor and hard drive extra), but shop around for a good street price.

For more information, contact American Mitac Corp., 410 E. Plumeria Dr., San Jose, CA 95134; (800) 648-2287, (408) 432-1160, FAX: (408) 432-0866. ■

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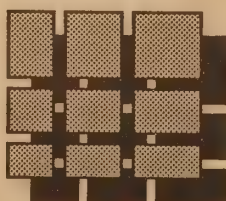
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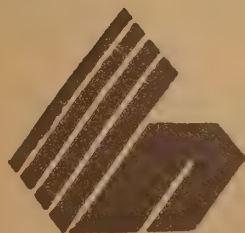
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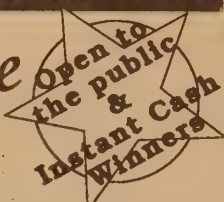
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Distributed by: Open-Apple

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Reviewed by: Mike Markowitz

The misty glens and bonny lochs of Scotland may be a far cry from the Silicon Valley, but a small Scottish company, CIRTECH, Ltd., makes some excellent electronics for the Apple II series. The UK is not burdened with the stupid trade policies that have caused chip prices on this side of the Atlantic to soar out of control, so these imported boards are a bargain.

The StatDisk is a static RAM card for the Apple II+, IIe, or IIGS. Static RAM chips (SRAM) are a strange breed. Unlike the more familiar dynamic RAM, which needs a constant flow of DC power to maintain memory, SRAM uses a tiny trickle of current from a small battery, even when the computer is turned off for over two months. The battery recharges whenever the computer is powered up, so this is a "non-volatile" (i.e., permanent) kind of memory. Even if the computer is turned off accidentally, the built-in backup power switches in automatically. You can store files and data on the card, unplug it from your Apple, ship it halfway around the world, plug it into another Apple, and every byte will still be intact.

The card can hold 512 K of chips, and has a connector for a "piggyback expander" board that holds another 512 K.

What makes StatDisk unique is that software treats it like a standard Apple II slot memory card. You can even boot from it, by placing it in a higher-numbered slot than any other device. In effect, the card is a very fast disk drive with no moving parts. By one measure, the access time is 20,000 times faster than a typical hard disk. Even a big program will load completely before your monitor warms up enough to read the screen! It can handle any Apple II operating system: ProDOS, Apple DOS 3.3, Pascal 1.3, or CP/M. Compliance with Apple's design guidelines ensures future compatibility (some board designers take shortcuts that can create compatibility problems).

The chips used on the card (32 K X 8 CMOS SRAM) are notoriously sensitive to electrostatic discharge (they can be zapped by the tiny electrical charges that build up on your body), so a few precautions are in order: keep the board in its protective bag, don't install it when the humidity is extremely low, ground yourself by touching your computer's power supply case before handling it, and never touch the gold-plated edge connectors. If the battery were accidentally shorted out the card would be damaged, so it must never be placed on a metal surface.

This card is an excellent solution for people who occasionally have to transport large files and complete applications among several Apple II computers

There is a single jumper on the card, which determines how the card will operate. With the jumper in the "Ramcard" position, *AppleWorks* will use the memory to expand its Desktop. With the jumper in the "Hard Disk" position, you can boot directly from the card, even on a II+ or unenhanced IIe. I had no trouble using StatDisk in the single slot of the Laser 128, an Apple II "compatible." Under the new GS/OS operating system, the Finder sees StatDisk as a very large 5.25" drive, but operates normally.

This card is an excellent solution for people who occasionally have to transport large files and complete applications among several Apple II computers. It makes a delightful environment for *AppleWorks*. It is more expensive than a standard RAM card, or, for that matter, a small hard disk, but if your computer is subject to hard knocks or frequent power outages, the ruggedness of non-volatile solid state memory is unbeatable.

In the USA, StatDisk is distributed by Open-Apple, P.O. Box 11250, Overland Park, KS 66207, (913)469-6502.

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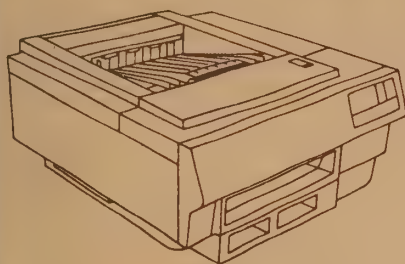
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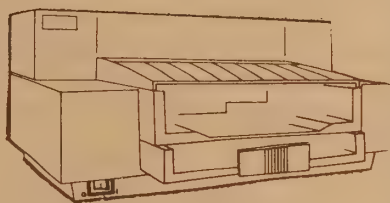
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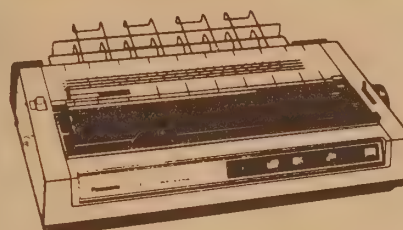
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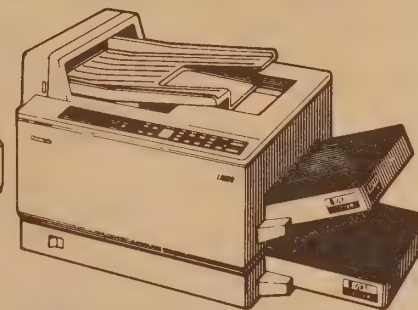
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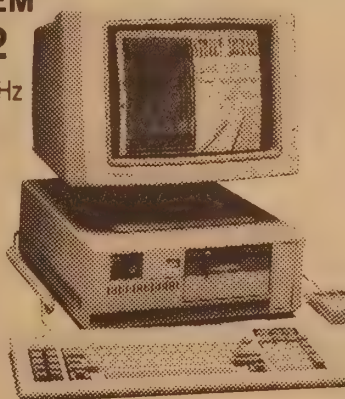
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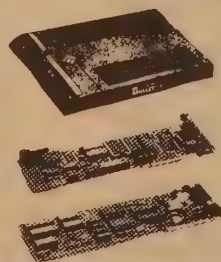


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GRAPHIC CARDS

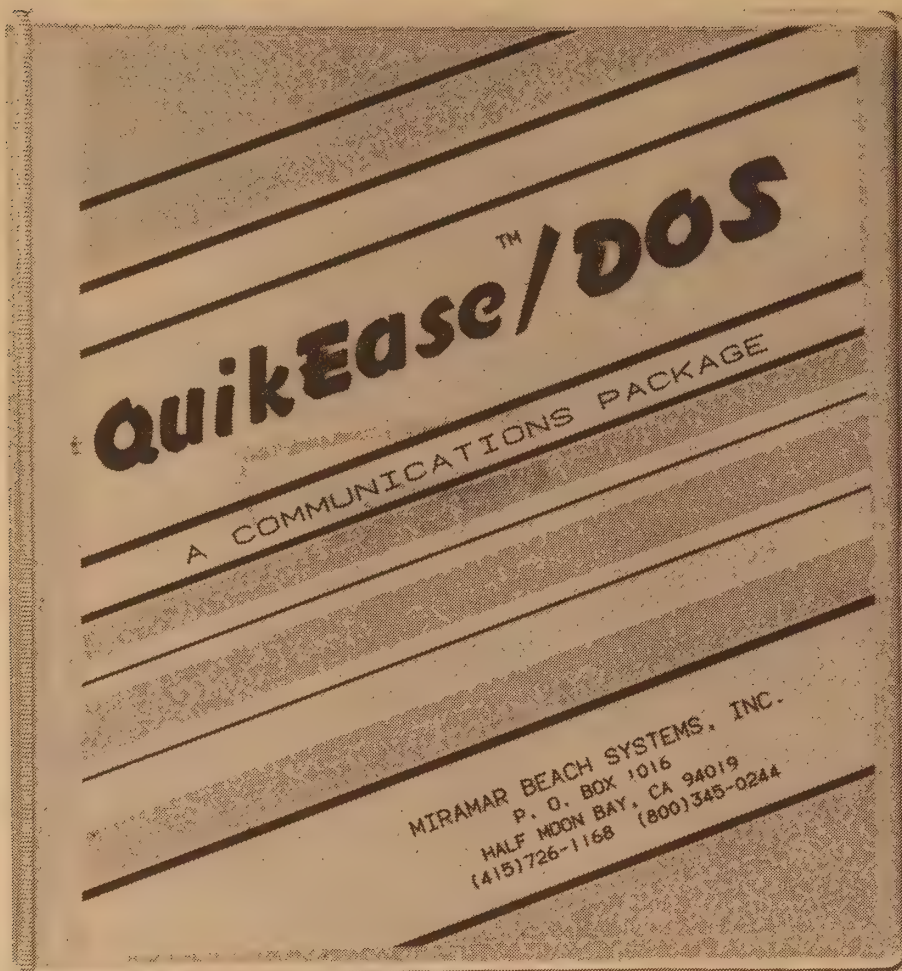
- Orchid Prodesign 16 Bit \$299
- Genoa Super EGA Hi-Res 185
- Paradise EGA 480 175
- ATI VGA VIP 279
- Orchid Designer VGA 249
- Paradise VGA 16 Bit 319
- Everex VGA 245
- Vega VRAM 539
- Video Seven Fast Write 355

PRINTERS

- Alps Allegro 24 \$369
- NEC P2200 (170, 80, 74) 359
- FULL LINE OF OKIDATA) CALL
- NEC P5300 (265, 132, 74) 735
- Epson LQ 850 599
- Epson LQ 1050 769
- Star NX2400 24 Pin 289
- Star NX1000 Rainbow 239
- Star NX1000 179

SPECIAL ITEMS

- Nanao 90705 16 1024x768 ... \$995
- Nanao 8060H 14" 820x620 ... 499
- Zenith ZCM 1490 Flat Screen 685
- Sony 1302A 629
- MS DOS 69
- Kaycat Keyboard CALL
- Murata M1200 Fax 649
- Canon PC Copier 369
- DOS 3.3 40
- Sysgen Controller for 4 FDD AT/ST ... 79

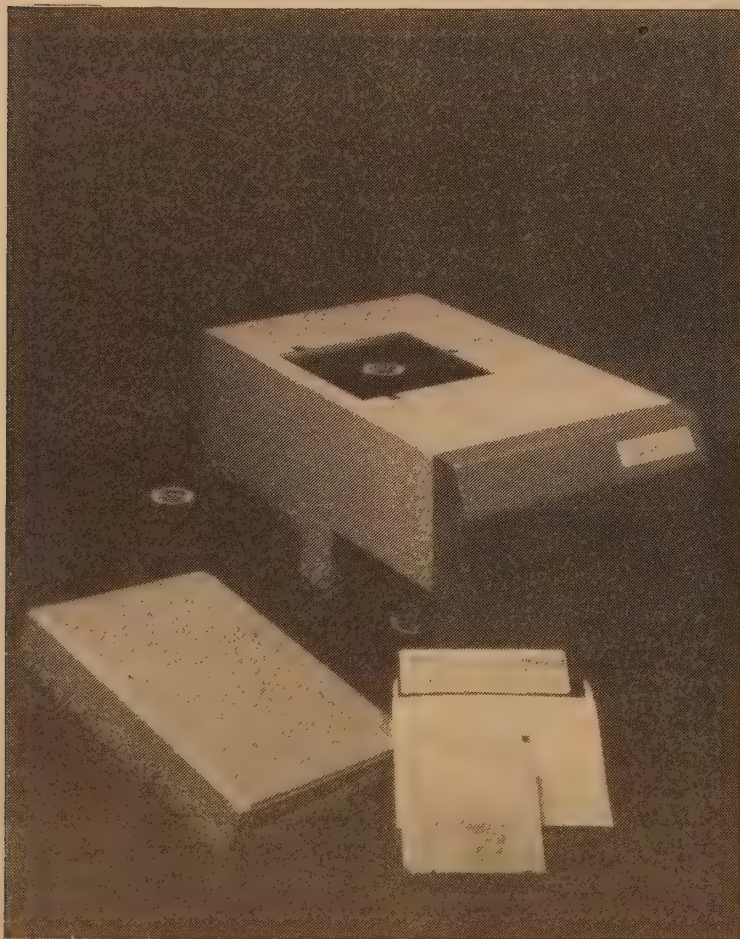


QuikEase Offers Novice Telecomm Users Menu-driven Interface

QuikEaseDOS is a PC telecommunications program that gives the beginning and experienced user ease of use and power in one package. To aid beginners, all functions can be selected from menus. Help screens can be called up at virtually any point in program operation, and script files for major on-line services and bulletin boards are included along with time-saving macros for each available as menu commands. For the more experienced user, an extensive script language is available. For full power users, all ease-of-use functions can be turned off and keyboard macros directly invoked, allowing a few keystrokes to do the work of many. Miramar Beach Systems, Inc., PO 1016, Half Moon Bay, CA 94019-9944. 1-800-345-0244.

Low-cost Flatbed Scanner From Computer Peripherals

CPI's High Fidelity JetSCAN is a low-cost scanner that offers 300 dpi resolution. A 8.5" X 11" document can be input in 10 seconds, matching the speed of some the fastest scanners around. The JetSCAN's proprietary software supports multiple file formats, and CCD sensor technology allows for reproduction of line art or halftone images, or a mixture in one document. The scanner also has 15 internal halftone patterns and provides for a selection of 51 contrast and brightness adjustments to allow for greater image quality control. (\$1695) Mike Mock, Computer Peripherals, Inc., 667 Rancho Conejo Blvd., Newbury Park, CA 91320. 1-800-854-7600.



No Need To Copy Disks Manually With DiskMachine

You won't have to bother with tedious disk copying any longer with DiskMachine, a hardware/software package that makes quick work of backing up a hard disk. Using your own backup software such as *FastBack*, *FastBack Plus*, *DOS Backup*, *DOS Restore*, *PC-FullBak*, *CoreFast*, and *TakeTwo*, DiskMachine's AutoLoad software launches your backup program and monitors the entire backup process. When a disk is full, DiskMachine automatically changes the disk, formats it, and resumes copying, while you spend time on more important things. Any business that makes regular backups or copies can use DiskMachine to save time and money. And DiskMachine can be used efficiently and easily with multiple machines—rather than purchase a tape backup drive for each PC, one DiskMachine can be used with them all via Quick-Connect cables. These inexpensive cables make it easy and fast to move DiskMachine from one PC or compatible to another to perform backups. A PC XT/AT or 386, or compatible, 384 K of RAM, and MS/PC-DOS 2.0 or greater are required. Micro System Designs, Inc., 1309 El Curtola, Lafayette, CA 94549. (415) 944-9994.

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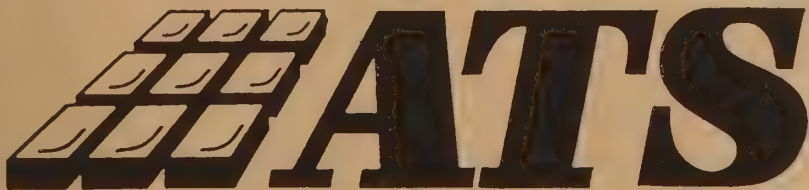
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SACRAMENTO
(916) 923-2944



MEMBER OF
NATIONAL COMPUTER SERVICE NETWORK

HARDWARE

BUYERS GUIDE

EXP 80386/20 System

- Intel 80386-16 $\Sigma \Sigma$ CPU
- 20 MHz 0 wait clock speed (24 MHz Version also available)
- S/W speed change (20/12/8/6)
- 6MB Memory board and 1MB RAM included (Supports shadow RAM)
- Industry standard PHOENIX Bios
- (1) 32 bit slot (5) 16 bit slots and (2) 8 bit slots
- Utility disk
- Norton SI:22 Landmark speed: 25
- 80287 & 30387 co-processor socket
- 1.2 MB floppy drive standard
- Hard & Floppy disk controller standard
- 220W UL power supply
- Keytronics 101 enhanced keyboard standard
- 1 serial/1 parallel/Game port standard
- Real time clock standard
- Hercules compatible monochrome card standard
- 12" Amber TTL monitor standard
- 15 days money back guarantee for S/W compatibility

\$1,495

Options:

EGA board & monitor	\$385
20MB (ST225) Hard Disk	225
40MB (ST251) Hard Disk	360
80MB (ST4096) Hard Disk	675
24 MHz System	1795
Tower case	95

EXP 80286 System

- 512K memory, expandable to 1MB
 - 80286-10 cpu, Phoenix Bios (3.10)
 - 6/10 MHz 0 wait. Norton SI:11.5
 - Keyboard (84 Key)
 - 1.2 MB Floppy Drive
 - Printer Port
 - Hard/Floppy Disk Controller
 - Real Time Clock
 - Hercules Compatible Mono Card
 - 12" tilt & swivel monitor
 - Keyboard
 - Hardware Reset Switch
 - Turbo Mode Switch & LED
 - 230W Power Supply
 - No Hidden Cost - Ready To Run!
 - Optional Tower Case
- 15 days money back guarantee for S/W compatibility

\$825

12 MHz 0 WAIT System ONLY \$895

Options:

EGA board & monitor	\$385
20MB (ST225) Hard Disk	225
40MB (ST251) Hard Disk	360
80MB (ST4096) Hard Disk	675
640KB Memory Upgrade	70
Tower Case	95
VGA board & monitor	575

EXP 8088 System

- 512K memory - expandable to 1 MB
- 4.77/10 MHz clock speed.
- 360KB floppy drive.
- Phoenix Bios (ver. 2.52)
- Printer port, Serial port.
- Game port.
- Real time clock.
- Hercules compatible mono card.
- 12" Tilt & Swivel amber monitor.
- Keyboard.
- 165W power supply.
- Slide in type case.
- Keylock switch.
- Power on LED.
- Turbo mode LED.
- Hard disk drive LED
- Hardware reset switch.
- No hidden cost. Ready to run.
- Optional NEC V20 (SI:4.0)
- 15 days money back guarantee for S/W compatibility

\$560

640KB memory	\$610
20MB hard disk	265
30MB hard disk	300
2nd 360KB floppy	75

EXP 80286/20 System

- 1MB Memory installed
- Fastest 80286 system. Faster than IBM PS2 model 80
- 80286 CPU running 20MHz, 0 wait
- Latest PHOENIX Bios 3.10 (built-in setup)
- 80287 socket
- Express RAM slot expands memory to 8MB running at full processor speed
- Memory beyond 1MB configurable as extended or expanded (LIM 4.0)
- 1.2MB floppy drive
- Printer port
- Hard/floppy controller
- Real time clock
- Hercules compatible mono card
- 12" amber TTL monitor
- Keyboard (84 keys)
- Hardware reset switch
- 230W power supply
- Chips & Technology, NEAT chipset
- CPU board is made in USA
- Norton SI=23, Landmark=26
- No hidden costs - ready to run!
- Detailed technical manual available
- 15 days moneyback guarantee for S/W compatibility

\$1295

Flat Screen 14" Amber TTL

- 14" Flat Screen Technology
- Non Glare, Dark Screen
- Built-in Tilt & Swivel Base

\$99

Star NX 1000

- 144 CPS high draft speed
- 36 CPS NLQ printing
- 8 built-in NLQ fonts
- Proportional printing available
- Push button control panel
- Paper parking mechanism
- Tractor and friction feed
- IBM Proprinter/Epson emulation

Free Cable \$189

PANASONIC 1091i

- 192 cps High Draft Speed
- 38 cps NLQ Printing
- Draft, NLQ (courier, bold PS)
- PC Magazine's Editors Choice
- Built-in Tractor Feed
- IBM & Epson Emulation
- 2 Years Warranty

\$199

Limited Quantity Only

NEC Multisync 2A

- New NEC Multisync Monitor
- 800 x 600 resolution
- IBM PC/XT/AT/386 & PS/2 compatible
- Unlimited palette of colors

Palette \$535

MONITORS

12" Amber TTL	75
JC 14" Amber TTL	89
14" Amber Flat Screen	99
JC 14" EGA	339
Nanao Flexscan	545
14" TTL white soft	125
IMTEC Multisync	450

ADD ON BOARDS

Multi I/O (FDC, S, P, G, C)	\$55
Mono graphic/printer	55
Color graphic	45
1.2MB/720K/1.4MB FDC	55
1200B Modem	59
2400B Modem	99
8088 Hard disk cont.	59
8088 Hard disk RLL cont.	65
80286 Controller MFM/RLL	119/145
Everex 3MB EMS (Lim 4.0)	85
Paradise VGA+/16	339
Paradise VGA +	285
Paradise VGA Pro	450
Everex EMS multifunction	65

PRINTERS

Panasonic 1124	369
Qume Scrip Ten Laser (Postscript 3MB Memory, 10ppm)	3,495
Panasonic 1091i	199
NEC P2200 24 pin	349
Epson LX-800	209
Star NX-1000	189

1:1 Interleave Controller

- DTC 7180: PC/AT, 1:1, MFM
- DTC 7187: PC/AT, 1:1, RLL
- DTC 7280: PC/AT, 1:1, MFM w/ FDC
- DTC 7287: PC/AT, 1:1, RLL w/ FDC
- DTC 6180: PC/AT, 1:1, ESDI
- DTC 6280: PC/AT, 1:1, ESDI w/ FDC

360K/1.2M/720K/1.4M Floppy Controller

- Handles any combination of 360KB/1.2MB/720KB/1.4MB floppy drive on 8088
- Easy to install
- Works on your 80286/80386 system.

Installation available

\$55

Used Computers.

We also buy & sell used Computer & Components.
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EVEREX

EMS Multifunction

- 1MB EMS memory
- 1 serial (2nd serial option)
- 1 parallel port
- Game port

\$59

DISK DRIVES

Fujitsu 360K/1.2MB	\$69/89
3.5" 720KB/1.4MB	79/99
ST225/238 hard disk	225/239
ST251/ST251-1 hard disk	355/435
ST4096 hard disk	675
ST125/138 (3.5", 38ms)	255/355
Micropolis 70MB	565

CPU BOARDS

8088 cpu bd (4.77/8MHz)	\$75
8088 cpu bd (4.77/10MHz)	79
80286 cpu bd (6/10MHz)	210
80286 cpu bd (6/12MHz)	250
80286 cpu bd (8/20MHz)	495
80386 cpu bd (6/8/16/20 MHz)	999
(1MB memory - cpu)	
Micronics 80386 cpu	1495
(1MB memory, cpu, 32KB cache)	

MISCELLANEOUS

Handy scanner (4 inch)	\$265
Keytronics 101 keyboard	55
Jr. Case/150W PS	38/43
Case/230W PS	55/65
Logi bus/serial mouse	75
DSDD diskette 1 BOX	4
DSHD diskette 1 BOX	9
MSDOS 3.3 w/GWBASIC	79
Keyboard/Monitor ext. cable	10
AC multi outlet	10
Printer cable	5
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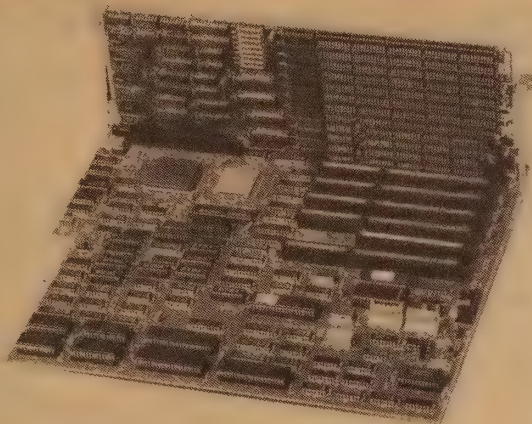


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UPS Shipping daily

HARDWARE

BUYERS GUIDE

Convert your PC/AT to 80386/20



FEATURES

- 20 MHz ϕ wait state
- Intel 80386-16 CPU
- Phoenix or Award Bios
- 6MB Memory & 1MB RMA included
- Supports shadow RAM
- Utilities Disk
- Made in USA
- Expand memory 1MB at a time
- Memory upgrade to 16MB available
- Supports 80387 or 80287
- S/W speed change (20/12/8/6)
- (1) 32 bit slot (5) 16 bit slots and (2) 8 bit slots.
- DOS, OS/2, UNIX & Novell compatible.

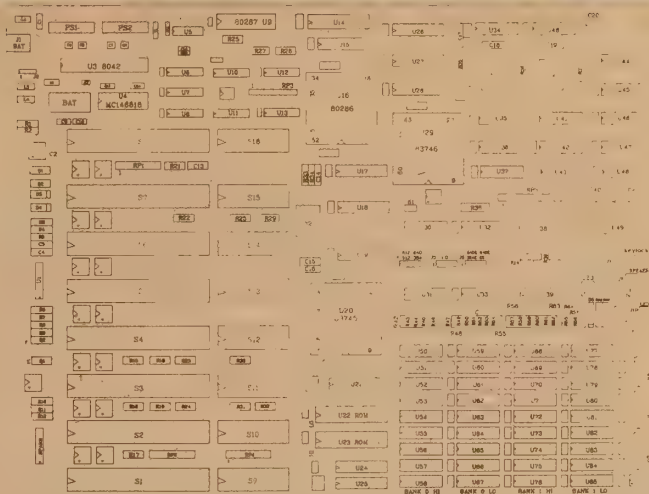
You may use your case, power supply, keyboard, floppy drive, hard disk drive and all of your add on cards.

Please call us for more information.

\$999.

* Free Installation

Convert your PC/XT to 80286/10.



FEATURES

- 6/12 MHz, 1 wait state
- Intel 80286-10 cpu
- Award Bios (built in setup)
- Same size as IBM PC/XT
- Can use PC/XT Controller or AT (16 bit) Controller.
- (2) 8 bit slots (6) bit slots
- Support 80287
- 1MB memory expandable
- DOS, OS/2, UNIX & Novell compatible

You may use your old 150NS DRAM (41256 only), case, power supply, keyboard, floppy drive, hard disk drive and all of your add on cards. Even you can upgrade with 16 bit add on cards too (Most other conversion board has only 8 bit slots)

\$250.

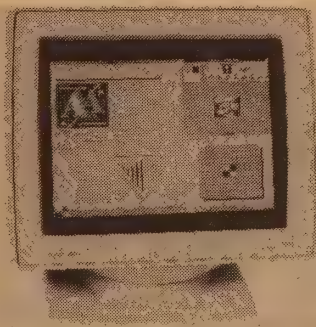
* Free Installation

1024x768 Display System

VENTURA

AUTOCAD

PAGEMAKER



WINDOW

GEM

BENEFIT

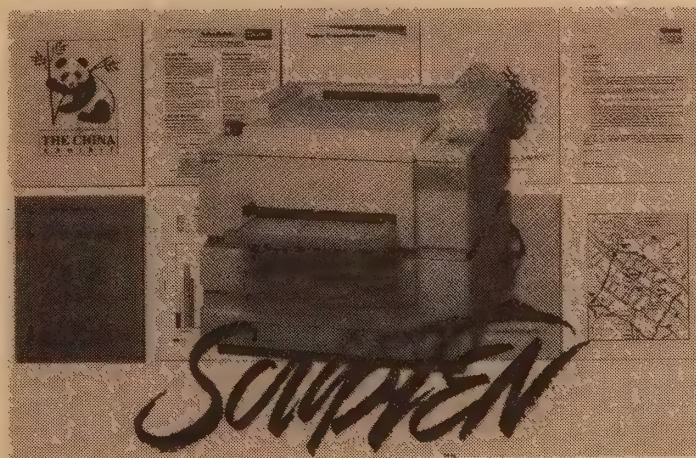
FEATURE

Compatibility	IBM PC/XT/AT, PS/2 30
Widest Scanning	29KHz horizontal scan
Horizontal lines	Interlaced
Vertical lines	1248
Superior display Resolution	798
Ergonomically designed for ease and comfort	1024 x 768
CRT	Built-in tilt and swivel base,
Display size	15" Diagonal, 90 degree, flat screen
Power Source	230mm x 170mm
Power consumption	AC 115/60Hz
Real controls	35 watts
Color	Power, Brightness, Contrast
Nonlinearity	V-size, V-Line, V-HDD
Input connector	Paper white phosphor,
Operating environment	Non-glare etched screen
Physical dimension	10% maximum
Testing	9-pin, D-type
Warranty	Temperature -5°C -40°C
	Humidity 5 -80%
	13" x 13" x 12"
	72 hrs. burn-in
	One year, parts and labor

\$475.

* With 15" monitor & card

POSTSCRIPT Laser Printer



ScriptTEN™

High performance and immediate delivery. Qume has it right now. It's the ScriptTEN with genuine Adobe PostScript® — a rugged value-packed laser printer that's 25% faster and comes with 50% more memory than the Apple® LaserWriter® IIx.

Start Desktop Publishing Today

The ScriptTEN with Adobe PostScript page description language gives you virtually limitless capability to create sophisticated graphics and layouts. You can integrate typefaces of any size and style with complex images to produce newsletters, manuals, artwork and illustrations with quality that rival typesetting systems.

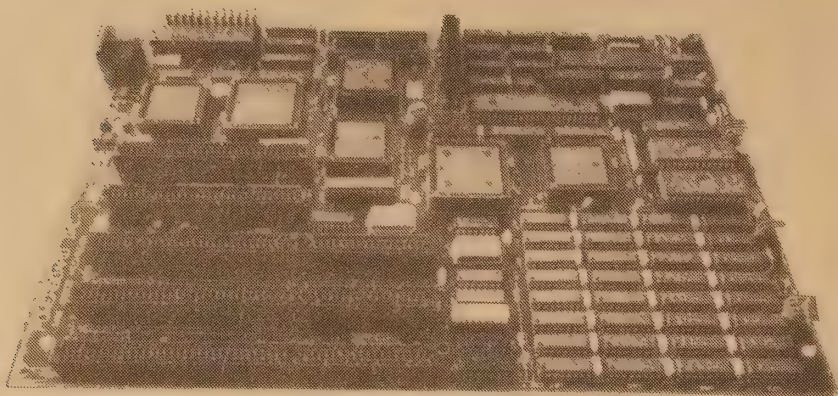
Choose from ScriptTEN's 11 resident type families with 35 typefaces in an unlimited range of sizes and styles. Or, if that's not enough, a wide selection of downloadable fonts is also available from Qume.

Plus ScriptTEN's ten-page-per-minute print speed and three megabytes of RAM memory give you full pages of printed bit-mapped images quicker than ever.

PostScript, Apple and LaserWriter are registered trademarks of their respective corporations. ScriptTEN is a trademark of Qume Corporation.

\$3,295.

PC buyers guide

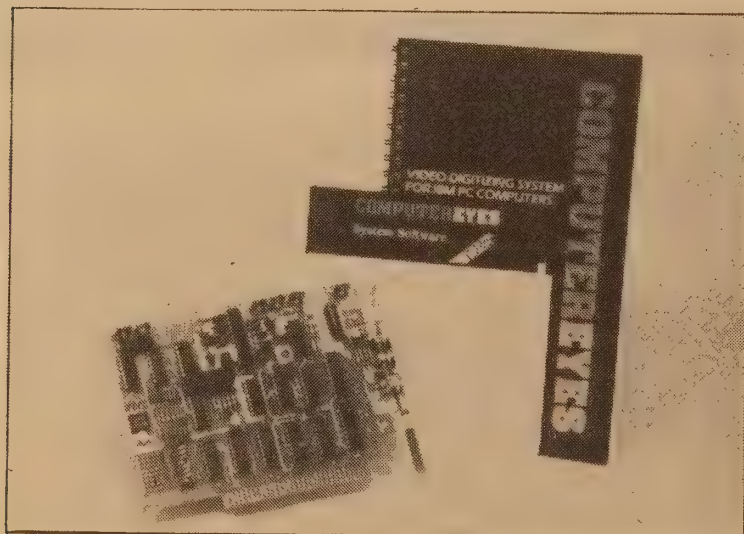


New Motherboard Gives PC Users Access To 286 Power And Speed

XT users who would like to step up to the power of a 80286 can fulfill their dream with Powersystems II, a motherboard that provides the performance and features of the PS/2 Model 60. Designed with the spreadsheet user in mind, the Powersystem II includes a proprietary on-board floppy controller and a proprietary disk caching system specifically designed to enhance Lotus 1-2-3. The motherboard is compatible with all IBM software, accepts 3-1/2" diskette drives as well as 5-1/4" ones, and comes with a two-year guarantee and on-call service and support. Powerboard, Inc., 3965 Research Park Drive, Ann Arbor, MI 48108-2296. (313) 668-1950.

XENIX Compatible Subsystem Provides Single-Digit Average Access Times And Multi-Gigabyte Capacity

The Patrick Henry XNX line of disk subsystems provides mass storage for XENIX based AT-bus systems. It includes single-digit average access times, built-in fault-tolerance, multi-gigabyte capacity and disk-spanning. The Henry line features hardware-level disk caching up to 320Mb of RAM, resulting in average access times between 0.5 and 7 ms. Its Fault-Freedom feature provides a greater safety margin for stored data and reduces system downtime. Automatic bad-sector management reduces data corruption by reallocating bad sectors on the fly, without operator intervention. To facilitate larger systems, the Patrick Henry XNX lines supports disk spanning, allowing a XENIX partition to reach the full maximum of 4.4Gb. An integral tape backup can also be included with a capacity of 2.2Gb per cartridge. (\$9,200—52,400.) 1776, Inc., 4522 Murieta Ave., Suite 700, Sherman Oaks, CA 91423, (818) 789-2004.

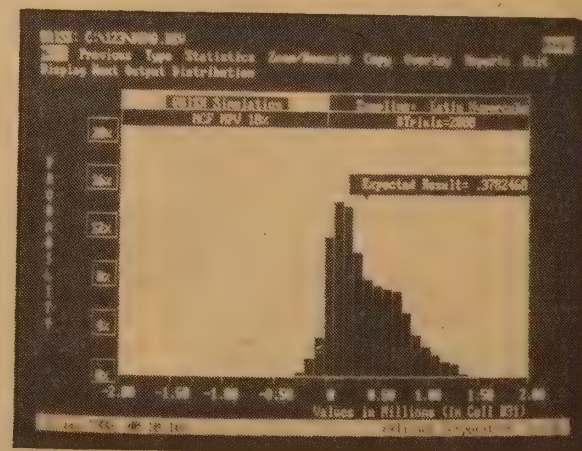


ComputerEyes Turns Your PC Into A Digital Camera

Ever want to use your PC as a camera? Ever want to take a real-life image and transport it in full color to your computer screen? Now you can with Digital Vision's ComputerEyes, a video digitizer that supports the color capabilities of the IBM PC or PS/2 Model 25/30. ComputerEyes allows you to use any standard video source (video camera, VCR, etc.) and display an image with the PC's standard EGA, MCGA or VGA graphics capabilities with up to 256 colors or 64 gray scale levels on-screen. A complete scan takes only six or twelve seconds, and on-screen, real-time adjustment of color is possible. ComputerEyes captures 640 X 200 video samples, 18 bits per pixel. For desktop publishing applications, ComputerEyes' captured images can be saved to disk in a number of formats including: .PCX, TIFF, Windows and GEM. (\$399.95.) Digital Vision, Inc., 66 Eastern Avenue, Dedham, MA 02026. (617) 329-5400.

New Software Add-in Tells You How Much You Are At @RISK

Harvard business school is making its MBA students use this software package for risk analysis and simulation modeling. @RISK, a Lotus 1-2-3 add-in, uses probability distributions and proven simulation techniques to evaluate uncertain spreadsheet models. A risk analysis in @RISK uses Monte Carlo type simulation in which uncertain cell values are varied across the entered probability distributions. All output results from @RISK simulations are displayed graphically as probability distributions by @RISKGraph. Output distributions can be displayed in a variety of formats including histograms, cumulative curves, summaries over ranges of cells and as overlays for comparison. (\$395.) Palisade Corporation, 2189 Elmira Rd., Newfield, NY 14867. (607) 564-9993.



EVEREX

COMPUTER SYSTEMS DIVISION

Some people say we
just outdid our
Competition

Often in this crazy industry, a newcomer seems to suddenly leap into the scene and takes the industry by storm. Such is a company called EVEREX.

In less than a year, EVEREX has introduced and delivered more models of computers than most companies since the dawn of our industry. From its 286/12 to its 386/25, these computers offer uncompromised performance at unsurpassed values. INTERNATIONAL MICRONET takes great pride in offering the **TOTAL EVEREX SOLUTION**. Call us for a complete line of Everex products. You'll be assured of quality service, knowledgeable staff and competitive prices.

1. Speed

EVEREX offers a complete line of computers unsurpassed in speed. These include the STEP 286/12, 286/16, 286/20, 386IS, 38616, 386/20 and 386/25, all with true 0 wait state processing.

2. Performance

Computers are generally measured in terms of their ability to process data. Generally, the industry standard for such a measurement is MIPS or millions of instructions per second. Just take a look at the chart for your own conclusion.

3. RAM

All EVEREX 286 computers are expandable from 1 to 4 megabytes of RAM. To support the true 0 wait state processing, memory chips are tested to 60ns -- almost twice as fast as most of our competition.

4. Hard Disk Interleave

Hard disk controller in EVEREX computers comes standard with 1:1 Interleave. As a result, data transfer rates -- (the bottleneck in most fast computers) are twice as fast than conventional 1:2 hard disk controllers.

5. Programmable LED

The EVEREX computers give you full Diagnostics upon power up in a very readable 8 digit display in the front panel.

6. Slots/Drive Bays

EVEREX computers are available in small and large footprints. The small footprints have 8 available slots and 5 half height drive bays.

7. DOS 3.3 is standard. 8. OS/2

Most vendors like to hide the fact that OS/2 is vendor level specific. This means vendors seeking to have OS/2 compatibility have to provide you with their version of OS/2. EVEREX has a version OS/2 available as an option for their machines.

9. Warranty

EVEREX computers and all EVEREX components -- including hard disks, monitors, and peripherals come with a full year of on-site warranty. This service is provided through NCS which has 106 locations nationwide.

10. 386 Expandability

All EVEREX 286 computers with the exception of the 286/20 can be upgraded to a 386 through a user installable kit. This transforms your 286 PC into a 386 using the 80386SX.

11. The STEP computer uses a large cache of very high speed static RAM which allows the processor to operate with zero effective wait states. The SRAM cache is implemented via Everex's Advanced Memory Management Architecture which provides higher throughput than is available with caching schemes available on other PC-compatibles.

12. Price

Feature for feature, the EVEREX STEP Systems have the lowest list prices. No other computer offers such uncompromising value.

	EVEREX	AST	COMPAQ	IBM	DELL
	Step	Premium 286	Deskpro 286	PS/2 Model 50Z	220
Speed MHz	12/16/20	10	12	10	20
Performance MIPS	2.5/3.2	2.0	1.9	2.0	3.2
RAM on Motherboard	1-4MB	512K-2M	512K-2M	1MB	1-4 MB
HD Interleave	1:1	1:2	1:2	1:2	1:1
Programmable LED	Yes	No	No	No	No
Slots/Drive Bay	8/5	8/5	8/5	3/2	3/2
OS/2 Support	Yes	Yes	Yes	Yes	Yes
Warranty	1yr on-site	1yr carry in	1yr carry in	1yr carry in	1y on site
386 Expandability	Yes	Yes	No	No	No
AMMA Cache	Yes on 28620	No	No	No	No



You know what! They're absolutely Right!!!



Authorized
Step Computer Dealer.

International Micronet
Systems

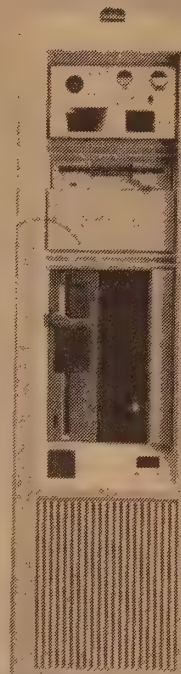
916 Clement Street (between 10th & 11th)
San Francisco, CA 94118
(415) 752-8843

SANTRON COMPUTER

386 Headquarters

80MB 25 MHz 386 Tower VGA System

- 386 25 MHz VGA
- Paradise VGA Card
- 80 MB HD (28 HSE, Seagate)
- 1 Meg RAM
- 1.44 MB Floppy Drive (3.5" Drive)
- 1.2 Floppy Drive
- Sony 1303A VGA Monitor
- 101 Keyboard
- 2 MB or 8 MB Expandable
- 386 20/25 MHz 0 Wait
- 2 Serial (one option)/1 Parallel/1 Game Port
- Novell, OS2, Unix and Zenith Compatible



MONTHLY SPECIAL

Paradise EGA (480)	\$148
Paradise VGA Plus	220
Paradise VGA Plus 16 Bit (286K)	290
Paradise VGA Plus 16 Bit (512K)	350
Mini Tower Case	150
2400 Modem	90

\$3100
Complete System

1 Month Satisfaction
1 Year Warranty Labor and Parts

386 25 MHz Motherboard

- 25 MHz, 0 Wait State
- Operation at 25/20 MHz, 0 Wait State
- Intel 80386-20, 32 Bit CPU
- Socket for 80387/80287 Math Coprocessor

- One of Bank use 256/1MB DRAM, another one use 256/1MB RAM-Module
- Two 32 Bit Slots for memory expansion up to 16 MB
- Bank0 and Bank1 can exchange

25 MHz 1 Meg RAM (70ns)

20 MHz CPU

Buy One = \$1100
Buy 2-10 = 1050
Buy 11 or More = 990

25 MHz

Buy 1 = \$550
Buy 2-10 = \$490
Buy 10 or more = \$450

20 MHz 1 Meg RAM (80ns)

16 MHz CPU

Buy One = \$1000
Buy 2-10 = 950
Buy 11 or More = 890

20 MHz

Buy 1 = \$520
Buy 2-10 = \$460
Buy 10 or more = \$420

Two 32 Bit Slots For
Memory Expandable
Up To 16MB

Socket For 80287 Math Coprocessor

One 8 Bit Slot

AMI BIOS w/Diagnostic & Set Up Software

Five 16 Bit Slots

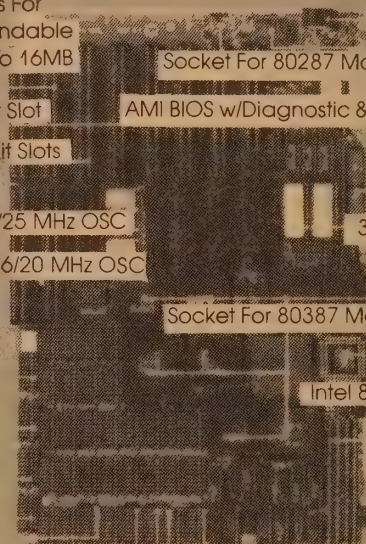
Turbo 20/25 MHz OSC

386 Chip Set

Normal 16/20 MHz OSC

Socket For 80387 Math Coprocessor

Intel 80386 32 Bit CPU



Dealer Inquires Welcome

SANTRON COMPUTER

1510 Noriega
(Between 22nd and 23rd)
San Francisco, CA 94116

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Mathematica

A System For Doing Mathematics On The Computer

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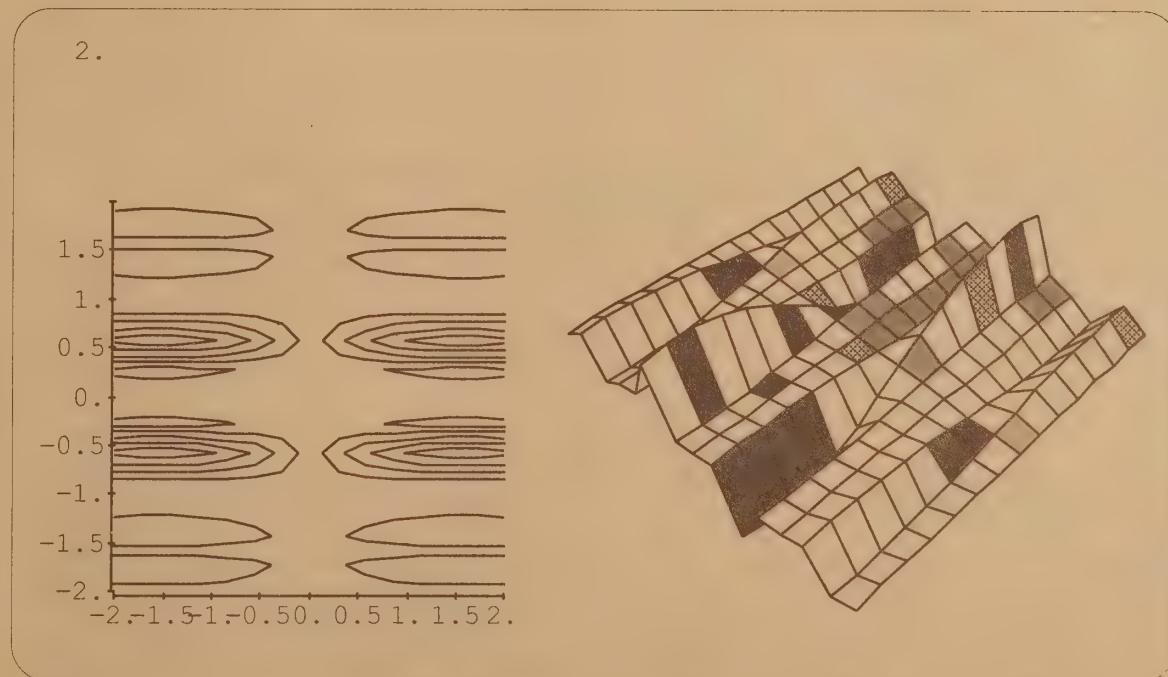
In this business you see a lot of false advertising, hype and puff. I looked askance, therefore, at the claims surrounding Stephen Wolfram's *Mathematica*. Color me repentant. *Mathematica* (for the Macintosh, Sun, NeXT, and Silicon Graphics Iris series, among others) seems to be just what it says: a system for doing serious mathematics on a computer.

Programmers have been working toward this sort of thing for some time. In the DOS world there is the excellent *MathCAD*. In the UNIX universe there are a number of products, allowing some symbolic solutions of equations.

Most solver-programs are just for those who apply mathematics. The discovery is done on pencil and paper and blackboard. *Mathematica* may change that. The inventor of the program clearly loves mathematics, and has provided the high spaces a lover of mathematics needs to work. Be prepared for a climb.

First Impression

When you see *Mathematica*, you know you are in the presence of power. Its manual (which you can purchase separately) is a 725-page hardbound book. When you do your first calculation, *Mathematica* excuses itself for a few moments to "load the kernel," and then presents you with a very sophis-



ticated engine.

For instance: what are the factors of 2 to the 25th, plus 1?

Mathematica tells us that

$$(2^{25})+1 = 33554433.$$

A contour plot and a three-dimensional surface plot of $\sin[x] * \tan[3y]$. Some shading was lost in the conversion to a PICT file. *Mathematica* also makes PostScript and Encapsulated PostScript files.

We ask *Mathematica* to factor it:

```
FactorInteger[ (2^25)+1]
```

and get the answer

```
{{3, 1}, {11, 1}, {251, 1}, {4051, 1}}
```

We use *Mathematica* to check itself:

```
3 * 11 * 251 * 4051
```

```
33554433
```

Nice.

That's *Mathematica* as a simple solver. But *Mathematica* is not a "simple" solver. It is designed to be used by working mathematicians, physicists and engineers, so their tools are provided. There are over 140 built-in mathematical functions. They range from the common trigonometric functions to Jacobi polynomials, Bessel functions, and Euler's beta and gamma functions. The program also provides a full set of tools for working with vectors and matrices.

As in other "solver" programs like *MathCAD*, you can quickly and conveniently define functions in *Mathematica*. You can store them in files and read them into the current document with a single command. You can therefore build a customized *Mathematica* environment in the conventional sense: *Mathematica* is extensible. We can define a function "oddpowers[variable]" that gives us 1 if the sum of the variable plus its square plus its cube is odd, or 0 if the sum is even.

```
oddpowers[ x_] :=  
Block[{a,b,c},  
  a = x^2;  
  b = x^3;  
  c = a + b + x;  
  Return[ If[EvenQ[c], 0, 1]]  
]
```

Now we try it out:

```
oddpowers[ 1]
```

```
1
```

```
oddpowers[ 133457865599080]
```

```
0
```

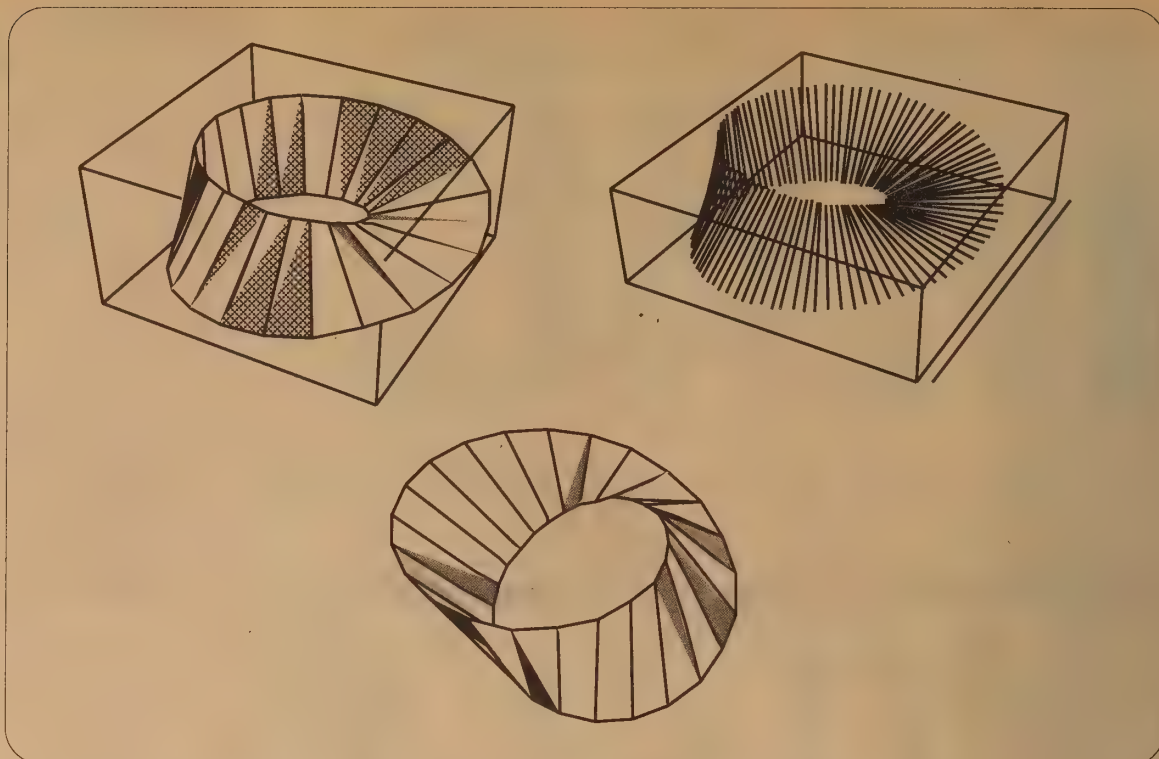
The latter calculation, by the way, took less than a second.

Show Me

With the solver comes a very complete graphic system. It allows you to draw not only surfaces, but complex shapes in three dimensions.

I took a topology class recently, and we discussed drawing the figures we were talking about. The Möbius strip, for instance: it is the one-sided, one-edged figure that appears in every article about topology. It's easy to draw a sloppy Möbius strip, but how do you draw one well?

In *Mathematica*, if you can come up with a formula, it can usually draw the figure. I labored for



Mathematica made three views of a Möbius strip from the same formula.

a while (the night before the final, in fact: "The knowledge that one is to be hanged in the morning concentrates one's mind wonderfully") and came up with a formula for points along the edge of the strip. From that formula *Mathematica* was able to draw an approximation—a homeomorph, or topologically equivalent space—of the Möbius strip. Very nice once more—the solver is a graphics program.

But again, it is not a "simple" graphics program. It creates PostScript output, so your work can be printed in the best resolution available. You can choose the viewpoint from which you observe the created figure, and you can place "lights" around it to illuminate it. You can set the brightness of those lights, and you can control the ambient light around the figure, so you have extensive control over shadow. You can have the program plot in color, and use the color to indicate mathematical information or just for appearance. *Mathematica* would suffice if it were only a graphics program.

Transformations— That's What It's All About

So much of *Mathematica* is direct and easy, like riding a bicycle on a prairie, that the first encounter with its higher powers is like coming into the foothills of the Canadian Rockies. The going gets steep, but the view becomes resplendent.

Mathematica is more than a solver, and more than a graphics program, because it is, in fact, a "transformer." The program works like LISP, and treats each input as a list to transform by rules it has "learned." It will continue to apply transformation rules until further applications result in no further transformations.

Mathematica uses this "apply relevant rules until there are no further changes" method to do all its work. It therefore can do symbolic transformations as easily as it can solve "2 + 2".

Mathematica knows how to define derivatives symbolically:

```
D[7 x^3 + 2 y^2 x^2 + 3z, x]
```

Mathematica gives us the formatted answer:

$$21x^2 + 4xy^2$$

```
D[Sin[Sqrt[2 x]],x]
```

```
Sqrt[2] Cos[Sqrt[2] Sqrt[x]]
```

$$2\sqrt{x}$$

If you read in the Integral file, it knows how to define many (though not all) integrals:

```
<<Integral.m
```

```
Integrate[ 21 x^2 + 4x y^2, x]
```

$$7x^3 + 2^2xy^2$$

```
Integrate[21 x^2 + 4 x y^2, y]
```

$$21xy^2 + \frac{4xy^3}{3}$$

Climbing higher into the mountains of *Mathematica*, we find that it is extensible symbolically. You can define new transformation rules for *Mathematica* to apply. The manual gives the following example. The function "Log" in *Mathematica* is minimally defined. It does not know how to transform the logarithm of the square of a variable. If we give it the formula

```
Log[x^2]
```

it responds with the same formula, nicely formatted but untransformed:

```
Log[x^2]
```

It also fails to transform an expression involving the logarithm of a product:

```
Log[a*b*c]
```

```
Log[a b c]
```

We can ask what *Mathematica* knows about the function "Log" with a query:

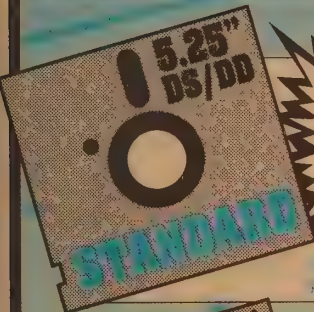
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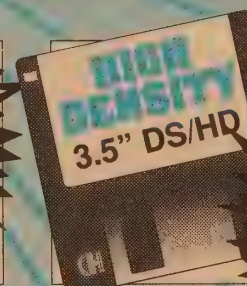
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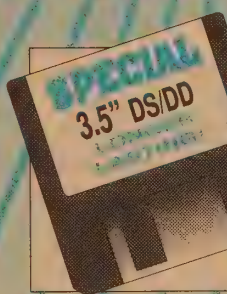
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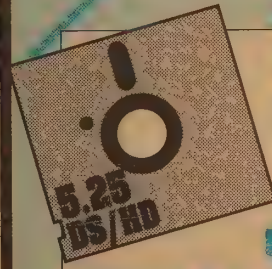
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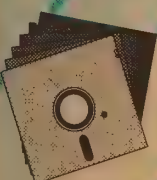
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??Log

Log[z] gives the natural logarithm of z (logarithm to base E). **Log[b, z]** gives the logarithm to base b.

We want to tell it how to understand the logarithm of products and the logarithm of powers of variables. First we remove the protection that prevents accidental redefinitions. Then we supply the new transformation rules, and reprotect the function.

```
Unprotect[Log];
Log[x_ y_] := Log[x] + Log[y];
Log[x_^n_] := n Log[x];
Protect[Log]
```

Now *Mathematica* can transform the logarithm of a product. Notice that it applies our new rule twice:

Log[a b c]

Log[a] + Log[b] + Log[c]

It also has learned to transform the logarithm of a power:

Log[x^2]

2*Log[x]

and it has added our rules to its definition of Log:

??Log

Log[z] gives the natural logarithm of z (logarithm to base E). **Log[b, z]** gives the logarithm to base b.

Log/: Log[(x_) (y_)] := Log[x] + Log[y]

■

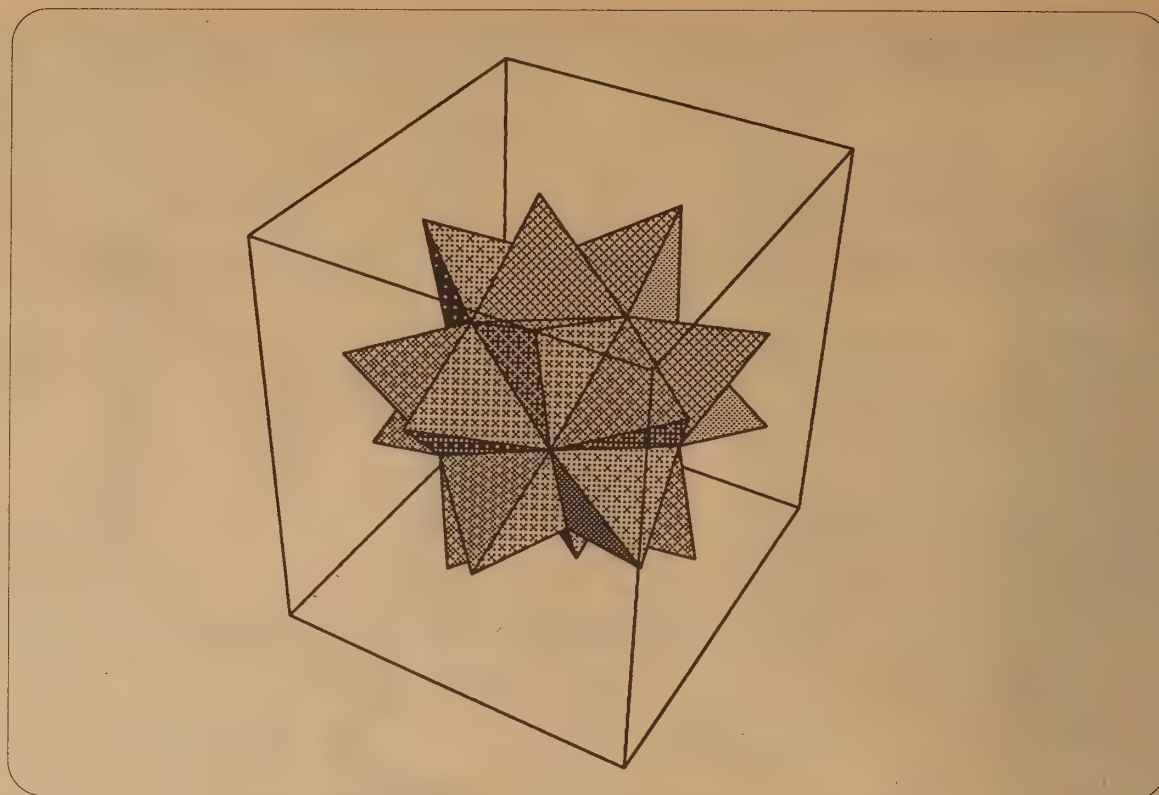
Log/: Log[(x_)^n] := n Log[x]

When *Mathematica* applies transformation rules, it looks for patterns in the argument slots. The definition of Log that comes with *Mathematica* teaches it to recognize the unmodified, single argument [x_]. Our definitions taught the program to recognize the patterns [x_^n_] and [x_ * y_] as well. This is *Mathematica*'s strength: it can recognize patterns and act differently in response to different patterns. It is not easy to use the pattern-matching facilities, but with them you can define very subtle distinctions. Like function definitions, symbolic transformation rules can be stored and read in from external files. There are 45 notebooks of application-specific functions and transformation rules included with *Mathematica*.

Ancestors

Wolfram gives credit to a lot of predecessors. That is refreshing in an era in which most developers are pretending, on the advice of their lawyers, that they stand on the shoulders of no giants whatsoever. Beyond the foothills, *Mathematica* is a high-level list-processor adapted for mathematics. Its heights are like those of LISP.

Mathematica is flexible because lists are flexible. You can use them to imitate matrices, and *Mathe-*



Mathematica can draw complex three-dimensional figures.

matica does so. You can create trees, strings, branching, and rejoining graphs. You also use the tools that work on lists to work on the algebra itself.

2 + 2

turns out to be internally coded as:

Plus[Integer[2], Integer[2]]

You are able to test these internal codings, and use the results in your own programming. You can use the function "Head[]" on an expression to find out what kind of expression you are dealing with. In this case, the answer would be "Plus," and the arguments of "Plus" are two "Integer"s. In the function "oddpowers[]", which we defined above, the head is "Block." You can write functions that deal differently with (say) complex and real numbers. You can also write expressions that search for, and act on, other expressions, by looking at these headings. *Mathematica* is a language in which mathematics ("Double[x_] := 2*x") and meta-mathematics ["Double[] is a multiplicative expression"] are written in the same language. Kurt Gödel would have liked it.

LISP is the primary ancestor of *Mathematica*, but you will find many good features of other languages here: the matrix functions of APL, the file functions of UNIX and C, the clarity of Pascal. Stephen Wolfram includes a section of the manual that describes the similarity and differences with other languages.

Is It Worth the Climb?

If there is a function or transformation you want, either *Mathematica* has it or you can write it. It is a programming language designed for mathematics, and it will carry you to great heights.

The list-based flexibility means extra work. You must tell *Mathematica* where in a list of lists it will find the levels on which you want to work. You will not be able to get to the elements of a complex matrix without mastering the commands that take

you to those levels. If you work in a matrix language like APL, you get faster processing but lose the flexibility. *Mathematica* seems like an ideal language for prototyping a mathematical solution, before exporting it to a faster medium when the algorithm is tuned and tested.

It requires at least two megabytes of RAM on a Mac, and you will need a hard disk. It's slow on a Mac SE. Wolfram figured that the user's thought would be better served by an interpreted language, so he accepted the slower processing of an interpreter. If you have a faster processor than my Mac SE, you will get faster results.

Mathematica lets you try ideas. It is a climb, but when you get to its high meadows, you can play with mathematical concepts. The user can be creative, and see the results immediately. It lets the mathematician try out a hunch, follow a notion. A tool that does that is always worth the cost. If you are uncertain, buy the manual first and look it over. You will buy the program as well. If I were an employer who had mathematicians in my house, I would buy each of them a copy of *Mathematica*. ■

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Mathematica™

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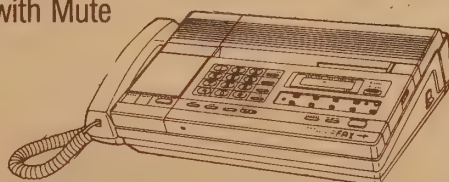
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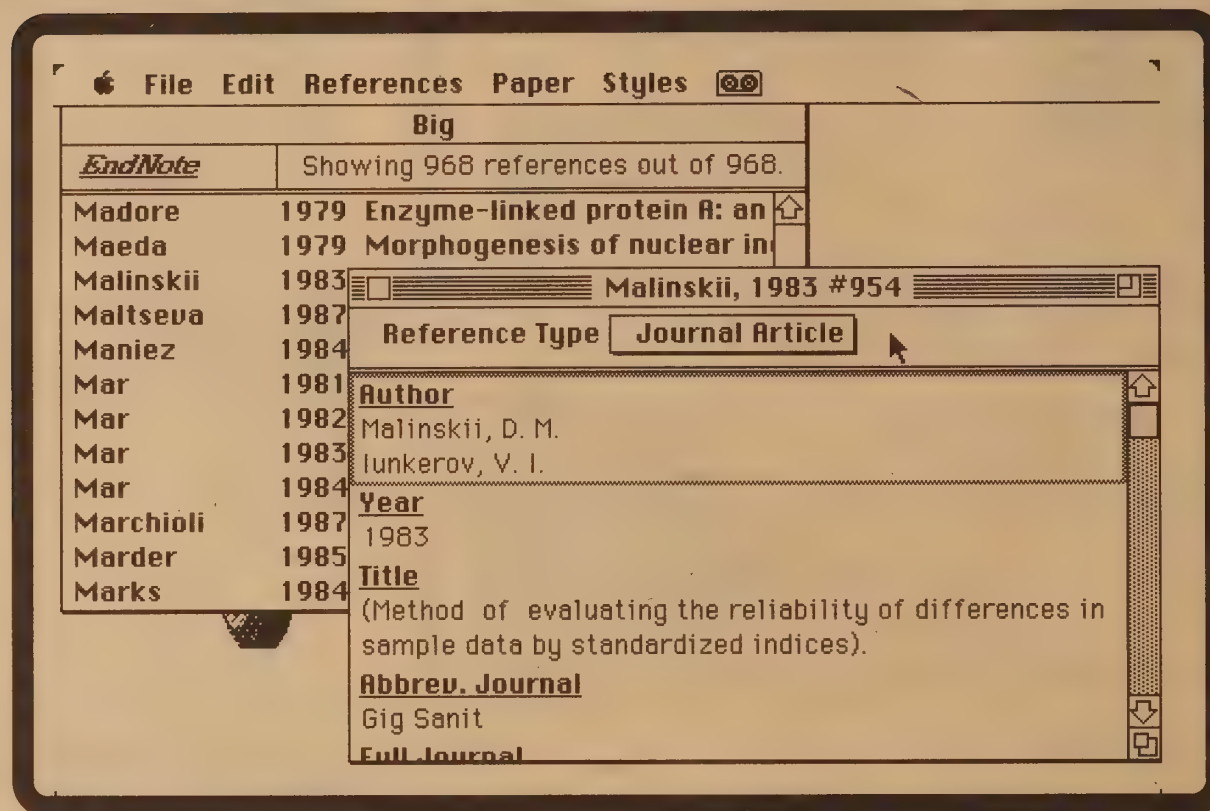
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EndNote, as its name implies, is used for creating and maintaining endnotes—basically footnotes whose reference information is placed at the end of the document, instead of at the foot of a page. While high-end word processors like *MS Word* do have the ability to create both footnotes and endnotes, they don't give you a convenient way of using information in multiple documents without either retyping the references or going through an arduous cut-and-paste process. *EndNote* allows you to create reusable databases of references, which can be easily manipulated.

In addition, if you want to revise the format of your table of references (for example, putting publication names before reference titles), and you don't have *EndNote*, you'll have a lot of retyping to do. *EndNote* has the capability of quickly generating tables of references in any kind of format.

EndNote contains two separate modules: a DA used to create and insert references during the

While EndNote will not appeal to general word processor users, or even to all students, it could become a mainstay of those who frequently write academic/technical papers and need a way to organize and access reference information.



writing and editing stages; and the *EndNote* program, used to reformat a document and create the actual table of references. The DA contains a subset of the program's capabilities and isn't needed under *Multifinder*. Creating a finished

document with references from *EndNote*'s database is a two-step process: first—inserting citation markers into your text using the DA; and second—generating the table of references at the end of the paper by using the *EndNote* program.

When invoked, the DA lets you open, or create, a library of references. These references appear in a pop-up window, and are shown in an abbreviated (first author, year, title) database-like format. Double clicking on the selection opens an overlapping window in which almost every conceivable piece of reference information (with the exception of "author's favorite color" or "name of author's cat") for the highlighted selection can be entered (see figure).

You can paste a reference from the database into your paper using the usual C/V combo. The pasted entry, called a *citation marker*, appears in your document in the form:

[author, year, ref#]

where ref# is an internal number used by the *EndNote* program. This is really an *intermediate format*. When you use the *EndNote* program to generate the table of references, this citation format will be replaced with one of your choosing.

Because *EndNote* is not an integrated part of your word processor, it has to finesse (in some sense) the process of generating a table of references. After you

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finish writing your paper and inserting citation markers, you must exit your word processor and reopen the document within the *EndNote* program to generate the table of references. This is really the only awkward thing about *EndNote*, and it strikes me as both kludgy and flexible. Kludgy, because it's a pain to have to exit your word processor to create your endnotes; and flexible, because this separation gives you the ability to access and maintain your reference databases independently of your word processor. The upshot of this "independence" is that you must create two documents: the first is your *original* paper with *EndNote*'s citation markers in the format shown above. The second is a *final document* in which the markers have been reformatted in the style of your choice, and in which a table of references has been generated. This second document is created by reformatting a paper within the *EndNote* program. Unfortunately, this means that your pagination may change between the *original* and *final* documents (because of differences in the length of the citation markers). So, final adjustment of page breaks must be postponed until after the table of references is generated. It also means that if you decide you want to go back and make changes in your text, you'll have to make them in the *original* document, and then regenerate

***EndNote* has a truly awesome array of customization features. You have complete control over the myriad details of how different kinds of references (books, journal articles, computer programs...) are printed, including the use of different fonts and type styles. You can create your own endnote styles or make modifications to the dozen-or-so that are included with the program.**

the *final* paper.

EndNote has a truly awesome array of customization features. You have complete control over the myriad details of how different kinds of references (books, journal articles, computer programs...) are printed, including the use of different fonts and type styles. You can create your own endnote styles (similar to word-processing style sheets) or make modifications to the dozen-or-so that are included with the program.

EndNote is also extremely Mac-ish, and the authors have really done a beautiful job making the interface easy and intuitive. As with all good Mac programs, you can become productive within a few minutes of opening the package. The manual is both clear and concise, and provides a good reference for the program's advanced features.

Most savvy academics have mastered the art of stretching their ideas so they can get maximum mileage and exposure out of their creativity and research dollars. This often means publishing variations on the same theme, in different journals. *EndNote* is tailor-made for these kinds of situations, giving you easy access to your references, and providing the capability to reformat them according to any publication's guidelines. While *EndNote* is clearly a niche product, if it's in your niche, you'll probably want to look it over. (*EndNote*: for use with MS Word 3.x, MacWrite, WriteNow (v1 and 2), and WordPerfect Mac. Niles & Associates, 2200 Powell, Suite 765, Emeryville, CA 94608. 415/655-6666. Retail Price \$129.00.) ■

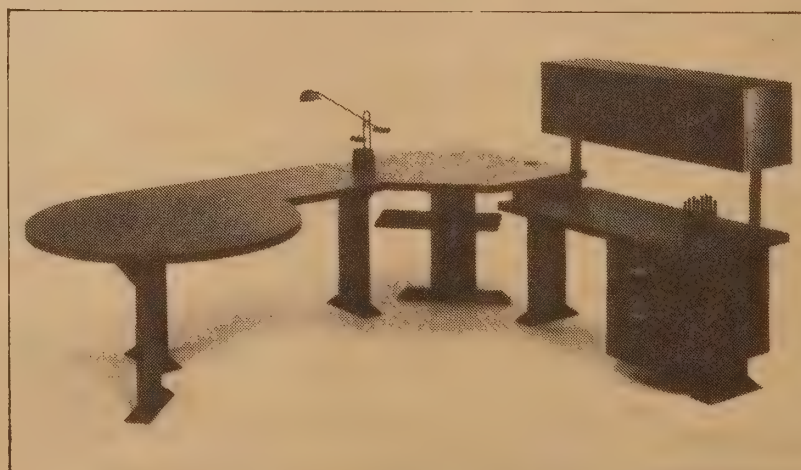
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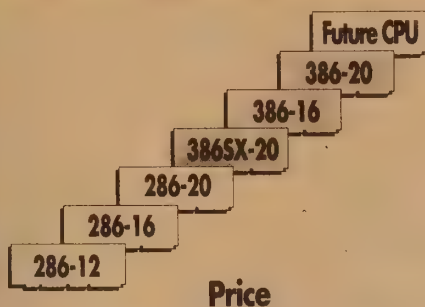


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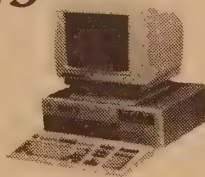
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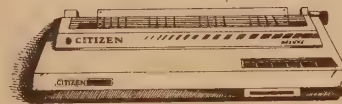
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MS Month At BMUG

The Questions We Would've Asked Bill Gates If He Hadn't Cancelled

Welcome to the BMUG column. It's MS month at BMUG—no that doesn't stand for "multiple sclerosis." That's MS, for *Microsoft*, wise guy.

The BMUG Bowl

The weekly BMUG meeting is a weekly playoff game. There are plenty of controversial calls and pressure situations. The blood pumps and an outside shot is attempted. We've got drives, slipped disks, and basket cases.

None of Your BeesWax

Apple came out with a new Mac II in March, the Mac IIcx. Everyone thinks this will be the big selling Mac II model—get your order in soon. It's really a very naughty name for a computer. If you speak in a Texas drawl it comes out, *Mac To Sex*. Dream on!

The best part of the IIcx announcement was the poster put out by the Apple Information Protection Group. It went out to all Apple employees on announcement day.

The poster read, "Today at 10 gala events around the globe, Apple unveils the long-awaited Macintosh IIcx. Too bad today isn't the first time it's been seen in public." Below that was the *MacWeek* magazine cover from weeks before that showed the new machine.

One line said, "Fortunately, there as many ways to protect information as there are types of information that need protecting." The poster only mentioned one way—good judgment. Good luck.

The Information Protection folks' motto is "Because what we know is *our* business." Their italics.

Oh, Where Have You Gone, Charming Billy?

Last month we announced that Bill Gates, boss of Microsoft Corporation, would be speaking at a

BMUG meeting. Bill's office called and canceled his appearance—"he's so busy." He won't be available until sometime in late 1990. This is his third cancellation (he was supposed to be here months ago) and everyone at the BMUG office was disappointed. Chicken!

He's obviously heard about our intolerance for marketing hyperbole. The BMUG crowd knows the Macintosh interface, programs, and programming. Microsoft has been in the Mac marketplace since the beginning—boy, have we got questions saved up!

Bill doesn't seem to back out of visits to user groups in Boston (BCS), or Washington (WAPS). He prefers to speak at groups that ask easy questions, like how it feels to have won the real-time software Lotto. The East Coast computer yuppie audiences go for "will all the thirtysomething billionaires raise their hands..."

Here are some of the questions that would have been asked at that April meeting.

Under the Microsoft-Scope

- How long can Microsoft avoid restraint of trade lawsuits with its early product announcements? This question comes from a recent suit against Lotus by Mosaic Software, makers of a spreadsheet called *Twin Level 3*. Lotus' *Release 3* was announced almost a year before the product was finally released, allegedly interfering with the fair spreadsheet marketplace. There are precedents from the 1960s with IBM.

Incredibly early product announcements are standard in the computer industry. Microsoft has done its part with early announcements and late releases—two sides of the same coin. If Mosaic wins its suit, perhaps this situation will improve. Of course, this might pressure companies into premature release of their software—like the infamous bug-infested Microsoft *Word 3.0*?

- What is your response to continuing allegations of the inelegance of Microsoft products? Has Microsoft focused too much on the machine/programming needs of its software and ignored the human/aesthetic needs of its users?

There is a continuing battle over the feel of Microsoft programs. Great programming, like great architecture, satisfies the user's work and spiritual needs. Software can be powerful and beautiful—fun to use.

The weekly BMUG meeting is a weekly playoff game. There are plenty of controversial calls and pressure situations. The blood pumps and an outside shot is attempted. We've got drives, slipped disks, and basket cases.

Microsoft is rarely on the receiving end of a beauty prize, but they're not one of the companies eating sour grapes, either.

- Compare the *Presentation Manager* software for the PC with the Mac interface. Is one better than the other? How would you improve each one?

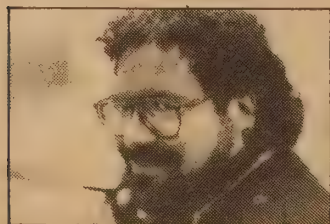
The Mac operating system is constantly evolving, although it's hard to tell from some of the awful updates we've had to suffer through lately. Soon we'll have a column of system wishes.

Presentation Manager is the graphics interface of the OS/2 system Microsoft is writing for the new IBM PS/2 line of computers. The poor product managers, in charge of writing the interface, were sworn to avoid any contact with the Mac. Gates has called *Presentation Manager* "cleaner." It must do windows.

Say the Word

- Do you consider *Word 4.0*'s violations of Apple's guidelines for pop-up menus constructive extensions to the Mac interface? Need your memory refreshed? Here are the offenders:

Menus are supposed to be in Chicago font—*Word*



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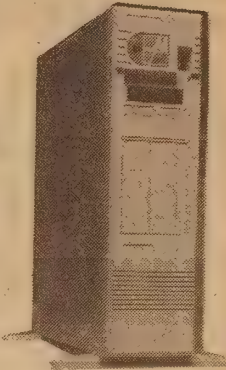
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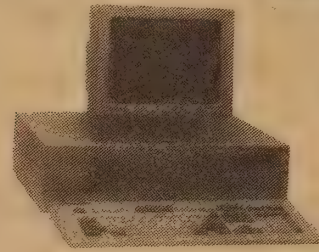
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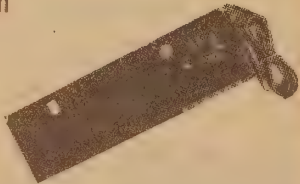
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4.0's are in something else. I font to be loved by you, just you, and nobody else...

Pop-up menus are supposed to pop out when the cursor hits the selection (the word and the space around the word flip black/white). Early implementations of pop-up menus had little arrows on the sides of items. When the arrow was touched by the cursor, the next hierarchy was revealed. *Word* 4.0 is still old-fashioned about arrows.

Even better is an editable field that extends from the side of the arrow in the menu. You can type a request in this field in the popup menu. My menus can do more than your menus, Nyaaah.

- You guaranteed that *Word* 4.0 would be totally free of bugs on release. Do you regret making this pledge? Can any piece of software be free of bugs? What does Microsoft consider a bug?

This was a problem with some of the bugs in *Word* 3.0—the programmers didn't consider printing and formatting problems bugs. *Real bugs* were code errors that crashed the program.

Does this bug-free commitment include the *Word* version seen running under A/UX (the Apple version of the UNIX computer language) at the UniForum show a month or two ago? When will other MS products run under A/UX?

- Is *Word* 4.0 Script Manager compatible? This refers to the new 6.0 System routines that handle text. Non-English systems can use this part of Mac system software. Bill says that more than 40 percent of Microsoft income comes from foreign sales.

As Time Goes By

- Where is the MS *Word* specifically for *Windows* (years in the works)? Where is MS *Mail* 2.0 (due out in October)?

- Why does Microsoft *Excel* still have to load first in MultiFinder, and why can it see only one megabyte of RAM—after MultiFinder has been out for two years? When will MS abandon its current software development system?

These are two complimentary questions. Microsoft uses its own brand of UNIX on some DEC VAX computers to write software. This process produces P-Code that creates the one-megabyte RAM restrictions. Holy arcane coding, Batman!

On the GatesWay

- How much longer can you keep such an active interest in the day-to-day operation of Microsoft? If you weren't "doing" Microsoft, what would you be doing? Beachcombing?

- Will you be joining other celebrity racing drivers like Paul Newman, Burt Reynolds, or Jose Canseco, in Grand Prix touring from Seattle to San Francisco? Bill's current flame lives in San Francisco, so he gets to stretch the legs of his hot sports cars on the weekends. Zooooom.

Now was that so bad? Bill, the light on the front porch is lit and the BMUG door is always open for you.

System Spring Cleaning

When people call the BMUG HelpLine with a printing problem, they're interrogated with a long list of questions about the Chooser, Page Setup, and Printer Drivers. Here are some things to check while waiting for the ambulance.

- Is the cable plugged in? This sounds obvious, but is an all-too-common snag. Most programs can't tell the difference between a confused printer and no printer. People that move their Macs around frequently don't tighten the cable's screws. Check the cable connection on the printer too.

- Do you have more than one device running from the printer port? ThunderScanners and some other scanning devices use a box that switches between the scanner and the printer. It's easy to forget when it's jammed by your desk against the wall.

- If you're printing to an ImageWriter II, is the select switch light on? It's easy to forget it, and easy to accidentally tap it off, too. People that hand-feed paper do this all the time—usually when you're in a big hurry.

Shareware Spotlight

Do you use just one program? You set the startup to the spreadsheet and off you go? You're missing a lot, Buddy.

There are hundreds of fun little things you can add to your system to make life and your time in front of the Macintosh more stimulating and rich. Must everything be useful and productive?

I enjoy a small shareware Init (StartUp document) called *Earth*. Many people call it *Earth-Apple* since its icon has both images. It turns the apple on the menu bar into a tiny rotating earth. It was written by Stefan Bilaniuk at Dartmouth.

Earth and lots more are on BMUG Utilities 10.

Everything Else

BMUG has one of the most up-to-date, comprehensive software libraries around with 350+ double-sided disks filled with the latest versions of public domain or shareware programs and *HyperCard* stacks. New disks are unveiled almost every week at the Thursday general meeting. BMUG also brings you the *PD ROM*™, our CD-ROM product.

Our BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network (apple!bmug!user.name@sun.com). With our multi-line capability you are now be able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

To get some further information about BMUG please write to: BMUG, 1442A Walnut Street #62, Berkeley, CA 94709. If you prefer to phone our business office call (415)549-BMUG. ■

Upcoming Events

- | | |
|------------------|---|
| April 13: | Microsoft <i>Word</i> 4.0. |
| April 20: | Symantec Corp. <i>LightSpeed Pascal</i> 2.0, SoftwareVentures <i>Microphone II</i> , version 3. |
| April 27: | Pacific Micro Marketing (color card), Preferred Publishers, Inc. <i>DAtabase</i> . |
| May 4: | Silicon Graphics (3-D), Matrix Industries Slide Camera. |
| May 11: | Working Software <i>QuickLetter</i> , Idea Associates <i>IdeaComm</i> . |
| May 18: | Finals Week. TBA. |
| May 25: | FoxBase, Brøderbund <i>TypeStyler</i> and <i>DrawingTable</i> . |

There are hundreds of fun little things you can add to your system to make life and your time in front of the Macintosh more stimulating and rich. Must everything be useful and productive?

What Is BMUG?

BMUG is an educational non-profit educational corporation, promoting the exchange of information. Like any growing organization it is many different things to its 6,000+ international membership. BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphical interface. For a while that meant the Apple Macintosh™ but now includes other makes, models, and operating systems, including the NeXT best thing. BMUG supports many Special Interest Groups (SIGs), a five-line Bulletin Board System (BBS), help-line, software library, weekly meetings, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter." Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue every Thursday evening, 6:00–9:00 (or whenever we finish), in the Physical Sciences Lecture Hall on the U. C. campus.

The BMUG HelpLine, (415)849-HELP, and our fax number, (415)849-9026, provide technical assistance and telephonic hand-holding during business hours (10:00 am–5:30 pm). If your question can't be answered on the spot, we try get you in touch with someone that can help. Of course, not every problem can have a happy ending—but we try.

Consulting The Oracle

Remember the moment in *Close Encounters Of The Third Kind* when the Mother Ship rose over the mountain? Well, that's *Oracle*—the mother ship of relational databases. On short acquaintance I can tell you that it is very big, it is very powerful, and it will take you far.

Oracle is a database system that has been realized on a large number of platforms, as well as the name of the company which develops it. The software runs on mainframes and minis, and can be found throughout the corporate world. The company unabashedly intends to dominate the market.

Oracle was the first database company to implement SQL, the "structured query language" that is becoming the standard language of the database world. SQL allows you to use the same query on your Macintosh and on an IBM mainframe. SQL is largely non-procedural, which means that you say what data you want, and ignore the question of how the machine will get it for you.

SQL's implementations vary from machine to machine, but *Oracle* has undertaken to make them identical across its various products. A corporation can thus buy *Oracle* to run on a single Mac, on mainframes, or on a network of mixed machines.

Oracle may not seem to be a Macintosh product. It does not have the traditional Mac interface, with clouds of pull-down menus. Nor does it settle for the text-only interface which it might use on other, more limited machines. *Oracle For Macintosh* has taken *HyperCard* as its interface. Thus (in the Macintosh platform at least) the completely text-based SQL language can drive a graphic interface.

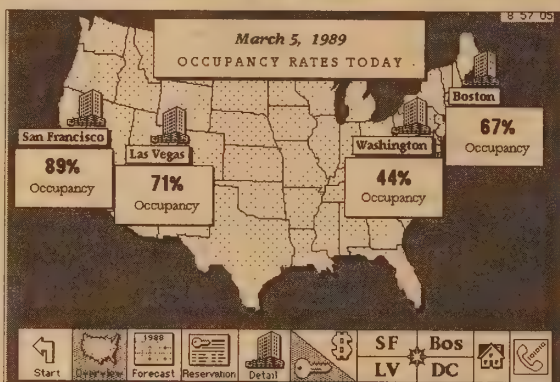
Without Reservations

In the documentation that comes with *Oracle*, you receive an application which simulates a national hotel reservation system. The Four Winds Hotel chain has hotels in San Francisco and a number of other cities. *Oracle* lets you examine the current reservations and occupancy in any of the hotels. You can do it with SQL, or you can do it with the graphic *HyperCard* interface which is supplied as an example.

If you prefer to use the SQL language directly, you can write a query in the "SQL*Lab" section of *Oracle*:



Copyright © 1989 by Birrell Walsh. All rights reserved. Birrell Walsh can be reached on the WELL (415-332-6106; user ID: birrell) and CompuServe (User ID 72466,3567).



It looks like *HyperCard*, but behind the familiar face is the full power of the *Oracle* relational database.

SQL queries are clear and easy to use.

Oracle For Macintosh has taken *HyperCard* as its interface. Thus (in the Macintosh platform at least) the completely text-based SQL language can drive a graphic interface.

SELECT * FROM ROOMS_SF WHERE OCCUPIED = "N"

SQL queries are clear. If you ever used DOS, you will recognize the asterisk as a conventional way of saying "All". With that substitution, this query is clear to any reader. You want all the unoccupied rooms in the SF_ROOMS database. Because SQL is non-procedural, you do not need to bother yourself about how (or where) that database is stored. It may be stored on your Mac, down the hall on a mainframe, or at the other end of a long-distance telephone link. *Oracle* is equally comfortable with any of those possibilities. And *Oracle* will handle complicated joins of multiple tables of data because SQL was designed to work with large relational systems.

You can use SQL to change information and administer systems as well as to examine data. It has levels of user permission, and has the possibility of single-administrator or multi-headed structures. You can create an *Oracle* network in which you have private spaces and public spaces in any combination you desire.

If you prefer that users use the graphic interface that comes with the Four Winds *HyperCard* example, they need never know SQL. They can find out how things are going in San Francisco by pushing a button. *Oracle* will get all the information and distill it for display on one card. It is possible to query all the relevant databases and get a national occupancy report on a map of the United States. To users this seems like a standard *HyperCard* application. In fact, all the power of the SQL database is behind this display. You can also use *HyperCard* to enter data into the system. The reservation card on the Mac can look just like that which a customer might fill out on arrival.

Making due allowance for my prejudice in favor



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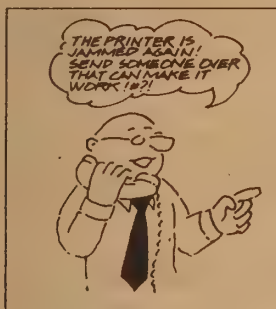
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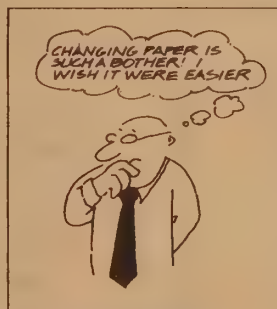
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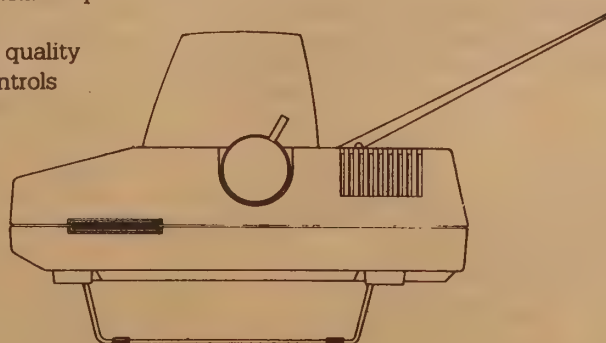


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MAC@WORK

of *HyperCard*, I find this a very clever solution to inter-platform problems. On the one hand, the application should be compatible with text-only Oracle systems on other machines. But we want to use the Mac's graphics. The Oracle Corporation managed to glue the graphic Macintosh world to the text-based SQL world by creating a hybrid it calls *Hyper*SQL*.

*Hyper*SQL* allows *HyperCard* to send SQL messages to the Oracle kernel. This works whether the kernel is local—running in your Mac—or across the country and resident in a mainframe. It also allows *HyperCard* to receive the answers and to distribute the data into cards or fields as you see fit. To *HyperCard*, the SQL of Oracle is a giant XCMD which gives and takes data mysteriously. To Oracle, *HyperCard* looks like any other user of SQL.

Room At The Top

The bad news (there always is, isn't there?) is that Oracle does not provide you with a finished application. Oracle comes as a tool kit with which you can design an application. There are many example scripts built into the stacks. Oracle also includes a C precompiler which will allow you to write C programs with embedded SQL commands. You can even design programs which will execute SQL commands entered at runtime. Oracle also wants about two megabytes of RAM just to move around. If you don't want to design your own database, or want a smaller product, it is not for you.

On the other hand, Oracle could be heaven for a person working for a large corporation. Because

Oracle will work on a large variety of machines, it is a chance to get Macintoshes (and *HyperCard*) into environments that have previously been hostile to them. You can build a point-of-sale information and order system that uses the Macintosh to show merchandise and take orders. It can use all the facilities of *HyperCard* to charm the customer. (Your application might even win the Mac II Oracle is offering for the best Oracle stackware. Deadline is May 31, 1989.) When you begin, you might feed this information to a small network of Macintoshes. As you succeed, you can bring in a mini or a mainframe, and still use Oracle. Since SQL is gaining acceptance so rapidly, you can be sure that the programs you write for the Oracle system will be easily converted to many other situations, and even other products.

I doubt you will have to convert, though; Oracle really is the mother-ship.

Oracle for the Macintosh

\$999 for the full, networked version;

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Oracle Corporation

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Speaking of Hotels...

...And changing the subject entirely: I got a copy of *Deja Vu II: Lost in Las Vegas*, and found myself waking up in a cheap hotel with a hangover and an angry mob after me. I couldn't beat the game after days of trying. Not even Suvid Tubtimcharoon, the neighborhood expert on adventure games, has cracked this cruel tale of gangster vengeance. If you love detective fiction, give this one a try. Let me know how to communicate with that deaf cabby in

If you prefer that users use the graphic interface that comes with the Four Winds *HyperCard* example, they need never know SQL. They can find out how things are going in San Francisco by pushing a button. Oracle will get all the information and distill it for display on one card.

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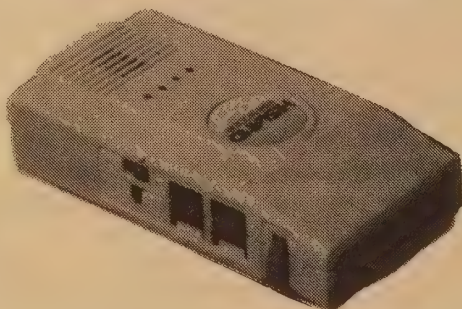
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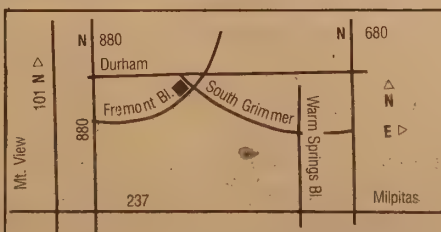
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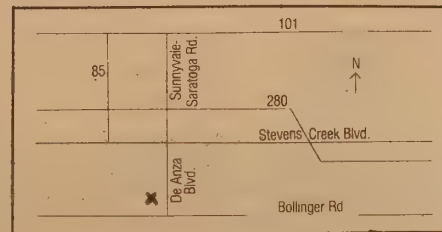
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Upping The Ante:

Does Adobe Illustrator 88 Make Windows A Threat To The Mac?

Cocktail party arguments can characterize an age. The ancients debated the rules of logic. The Renaissance argued whether the world went around the sun. The Enlightenment argued about how many angels could fit on the head of a pin.

For better or worse, the argument that seems to characterize our age is, "What's better: PC or Macintosh?"

As one who earned his degree in cocktail party conversation at a Big Ten university, I can attest that this is one hot topic. I've conversed with people who had no opinion on gun control, couldn't distinguish women's rights from animal rights, or say things like "don't blame me for the budget deficit, my checkbook's balanced."

At a drop of a hat, however, these same people can go on for hours about the various merits of one machine over the other. Have you ever heard a graduate student in 18th century French theater wax eloquent on the Macintosh, *ah yes every window a stage, every icon a prop, the cursor is the harried stage manager and every character is well... um ... a character.* That's enlightenment!

Until recently, however, there really was no question about this, was there? Anyone who owns a Mac *knows* which one is better.

Or do they?

If the great Mac vs. PC debate can be pictured as a balancing scale, then Adobe has thrown another weight on the side of the PC. *Adobe Illustrator 88, Windows Version*, brings to the PC one of the last major holdouts of the Macintosh world. It's tougher for the Mac loyalists to claim unquestioned superiority. PC legionnaires can proudly sing in their best Ethel Merman, "Anything you can do, I can do better."

Pretty disgusting image, isn't it?



Copyright © 1989 by Robert Beauchamp. All Rights Reserved. Rob is a freelance journalist and documentation writer who resides in Minnesota and misses, sometimes, the lovely and crowded Bay Area.

PC Requirements

Adobe Illustrator was never designed as a toy for the average user. The Macintosh's easy-to-use graphic interface, however, might entice a novice, for better or worse, into the complex art of PostScript illustration.

This is guaranteed not to happen in the PC world, however, for one simple reason: an extraordinary commitment to equipment.

Adobe Illustrator 88 Windows Version requires a 286- or 386-based PC and a recommended *two megabytes* of expanded memory. This along with a hard disk, Hercules, EGA, or VGA graphics card and monitor and a mouse.

A PC with at least two megabytes of expanded memory is a rare thing, certainly more likely to be found in a corporate environment than in someone's den.

While skipping over the home market completely, Adobe gives professional designers, artists, and in-house production groups, who are going to have to spend a lot of money anyway, a real reason to look into a PC environment.

New Features, Disappearing Features

Illustrator 88 Windows Version is remarkably similar to its Mac sibling. While there are a few new features incorporated into the 88 update on the Mac that can't be found in the *Windows* version, the most important new tool is found in both packages.

The most significant new addition to the toolbox is the auto trace tool. Anyone who's painstakingly traced images to the point where they wondered if this computerized stuff was really faster than doing it by hand will have their faith restored the first time they click auto trace. Clicking on your template after choosing the auto trace tool almost instantaneously provides you with a piece of *Illustrator* artwork complete with control handles.

The only hitch is that *Illustrator* doesn't know which lines are important to you and which aren't. This requires the user to do a little cleaning up. Nonetheless the time saved is truly amazing.

There are two major features not found in the *Windows* version. The first is the amazing blend

Adobe Illustrator 88, Windows Version, brings to the PC one of the last major holdouts of the Macintosh world. It's tougher for the Mac loyalists to claim unquestioned superiority. PC legionnaires can proudly sing in their best Ethel Merman, "Anything you can do, I can do better."

tool. This allows you to create smooth blends between colors, shades of gray or line weights. It also allows you, and this is the amazing part, to create a blend between two shapes. The example used by Adobe has a swan blending into the letter S. Again, all you have to do is choose the blend tool, determine the parameters of the blend on a menu, and click on the two objects.

Why this feature was not included in the *Windows* version is a mystery. Maybe it will appear in a future update.

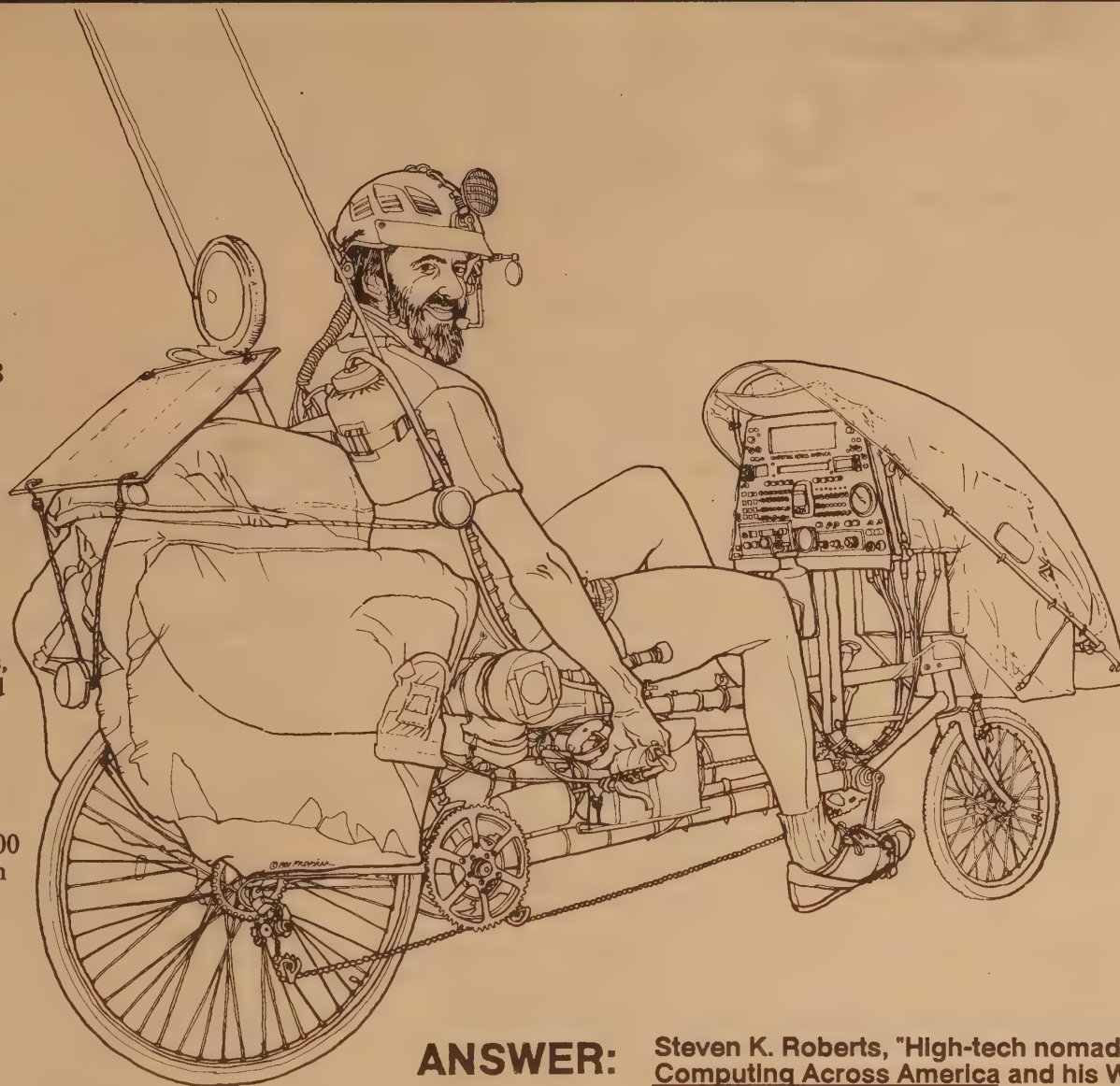
The second and more important feature left out of the *Windows* version is *Adobe Illustrator's* superior use of color and its ability to generate four-color separations.

The Mac fans can now reassume their smug feeling of innate superiority.

You can use color in the *Windows* version, you just can't see it on your screen. Even with a VGA or MCGA set up, you'll have to rely on your color samples with known yellow, cyan, and magenta

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MAC @ WORK

values. You enter these values in the fill box. After sending your file off to a color laser printer which uses a PostScript interpreter, you can see how close you were.

This hit-and-miss game would be easier if the Windows version included another brilliant feature of the Mac version: Pantone colors. There are over 700 Pantone colors, and each of them is assigned a number. Pantone Incorporated supplies your professional printer with the formulas for the ink. Using a color chart, you simply decide which colors you want to use and give the number to your printer.

When you go to fill an area with color on the Mac, you can scroll through the Pantone color chart and make your choice. Screen representations of these colors are included in *Adobe Illustrator*. You'll have to do a little adjusting of your monitor to make these screen colors match their print counterparts as closely as possible.

I'm sure the reason that Adobe didn't include the ability to use Pantone colors on the PC is that it is simply impractical to make color separations with the PC's limited color range. Without being able to see and experiment with the colors on screen it would take forever to make the simplest separations.

So it appears that the Macintosh edges out the PC once again. But here is something to consider. A Mac II with a color monitor and enough memory to deal with 700 Pantone colors is rarer and more expensive than a 286/386 with two megabytes of expanded memory.

The Mac's ability to do color separations will not mean much to those who prefer the convenience of having their color separations done professionally.

With the bottom-line mentality of most corporations and Apple's fluctuating price policy, the introduction of *Adobe Illustrator* to the Windows environment makes it increasingly harder to get that first (or next) Mac in the door.

Connectivity Issues

I really don't want to be the last person to jump on the hog pile on Apple over the pricing controversy. The sad fact is, however, if one machine can do it all at a lower price, then everyone will want that machine. And I'll be out of a job because there won't be another machine to connect to.

As far as connectivity goes, Adobe did everything right. Both versions of *Illustrator* are completely compatible.

There are, however, a few rules you have to remember when dealing with PostScript files.

When you save your document in the Windows version and you want to use it in the Mac version of *Illustrator*, save it in the PostScript (.AI) format.

If you want to use it in a DOS application, such as *PageMaker* for the PC, save it in the Encapsulated PostScript (.EPS) format. Instead of your application just showing a gray box where you place your art, using this format allows you to see your artwork.

If you know you're done editing your work, and you're not going to use it in another application, and you're not going to move it to the Mac environment, save it in the Adobe Illustrator Binary format (.AIB). This speeds up the opening and closing of

your files. This is useful when you are printing a large number of files.

On the Macintosh side the principles are the same.

If you want to save your art to be used in a Macintosh application, choose Apple Macintosh from the format selections. This combines an EPS format with a Quickdraw PICT format, creating a visual representation of your PostScript file in your Mac applications.

If you want to use your art in a DOS application, choose IBM PC. This gives you an IBM EPS file that does the same thing for PC applications as Mac EPS did for the Macintosh applications.

If you want to save your artwork for later manipulation in *Adobe Illustrator* on the Mac chose none from the format selections.

As I outlined in a recent column about graphics and *PageMaker*, one of the best things you can do for yourself if you deal regularly with graphics files is purchase *The Curator* from Solutions International. The Curator has a feature that allows you to translate file formats, allowing greater flexibility when you're working with artwork from a variety of applications. ■

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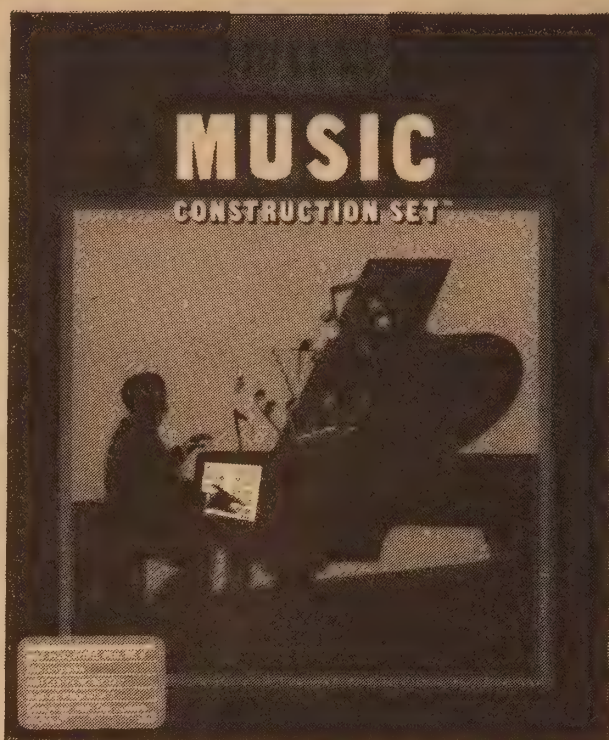
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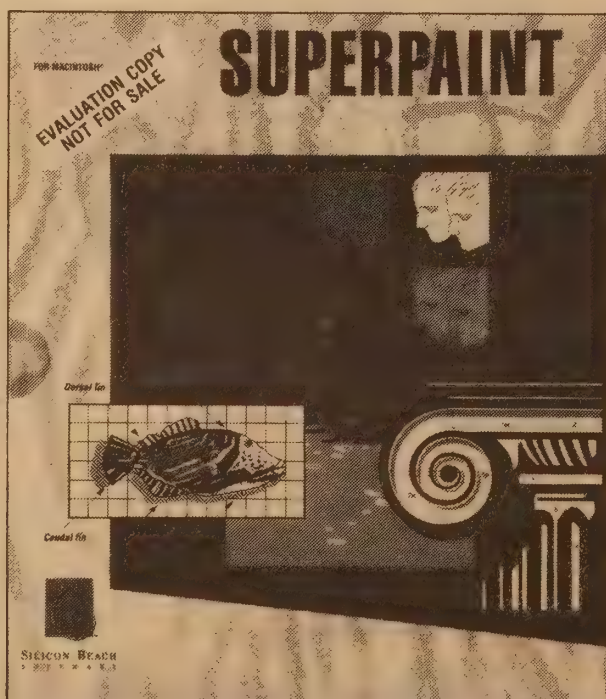


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Teac/Toshiba 3.5" 720K	69
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Keyboard

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Keytronic Enhanced	49
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Misc.

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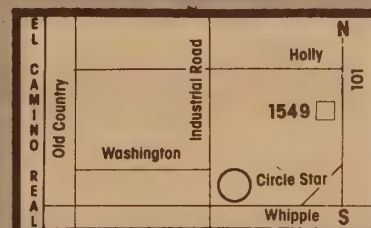
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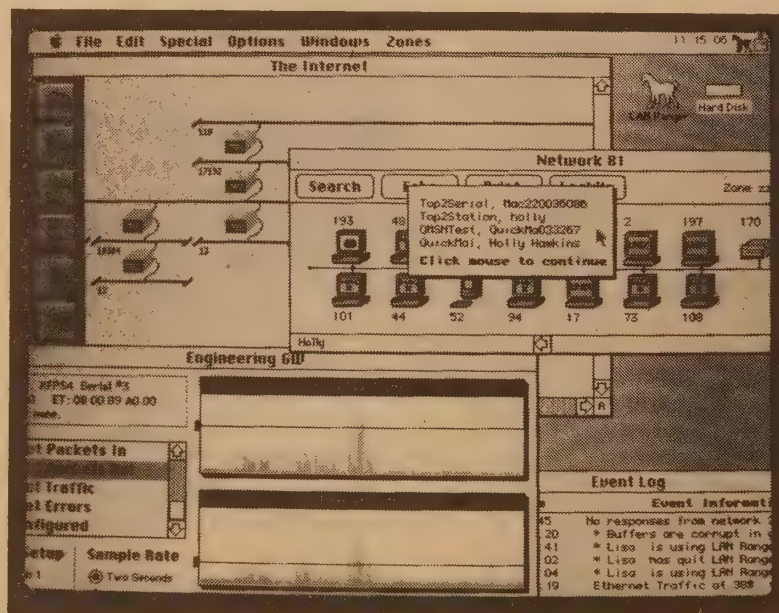
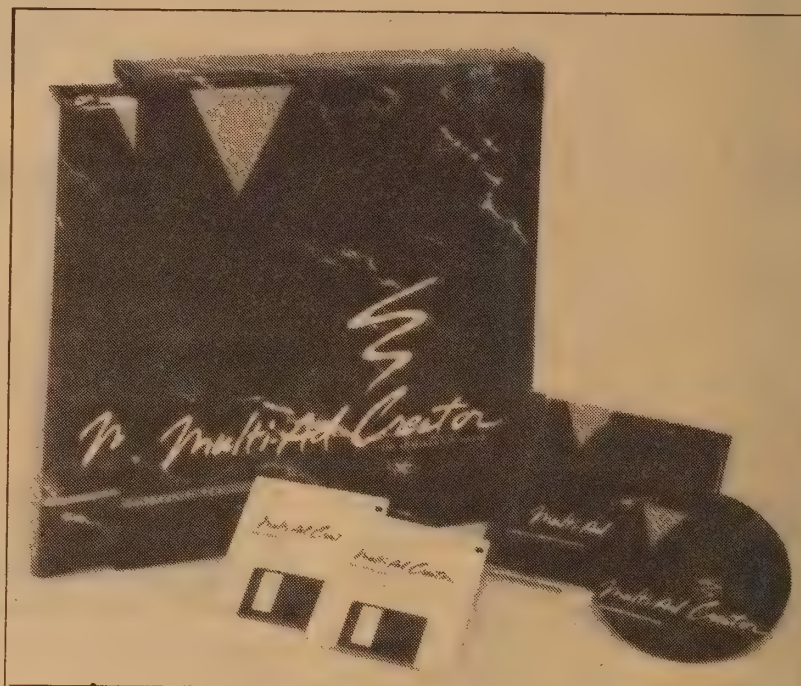


Archiving Utility Catalogs And Stores Files

Retrospect, from the makers of *DiskFit*, a backup utility, is a new archiving utility that will archive files to a wide variety of media, including diskettes, removable disk cartridges, DC-2000 and DC-600 tape cartridges, optical cartridges, and file servers. The utility allows files to be moved from source to destination for pure archive operation, or copied in order to back up files remaining on the source volume. *Retrospect* creates structured archives that allow rapid access to an unlimited amount of data. An archive catalog stored separately on the user's hard disk lets users reference their archived files without inserting the storage media. *Retrospect* also allows automatic file selection by using Selectors that match files according to characteristics such as name, size, date, type, position, even icon color. Other features include full AppleTalk network support, compression of archived files using the Lempel-Ziv algorithm, and encryption to the DES standard to satisfy government data security requirements. (\$249) Dantz Software Development, 1510E Walnut St., Berkeley, CA 94709. (415)849-0293.

Multi-Ad Creator Provides Professional Ad Layout Capabilities

Multi-Ad Services has introduced the first full-featured professional ad layout program for the Macintosh. *Multi-Ad Creator* is intended for fast ad layout and precise typographic control of single-page, art-intensive documents created by newspapers, ad agencies, graphic designers, and retailers. It has an object-oriented environment making it possible to create a complete display ad in black or white halftones or color in a fraction of the time normally required. *Multi-Ad Creator's* unique ad makeup capabilities include free rotation of grouped graphics and text, copyfitting, suggested layouts, advanced object drawing and manipulation, controlled duplication of objects, customizable ad layout environments, high resolution PICT borders, "design sheets" with standard ad attributes, and the ability to export PICT files for use in page layout programs. Text features include automatic copyfitting, rotation, text wrapping to fit inside or outside an object, kerning to 1/1000 em, horizontal scaling, text wrapping around or within objects, text flow into blocks, color or gray scale text, reverse text, superior numbers, offset baseline, and advanced styling. A Mac with at least a megabyte of RAM and a hard disk are recommended. (\$995) Multi-Ad Services, Inc., 1720 W. Detweiller Dr., Peoria, IL 61615. (309)692-1530.

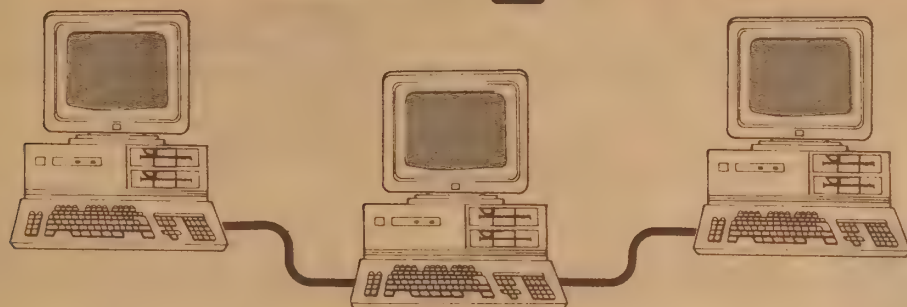


Network Management And Diagnostic Software For AppleTalk Networks

LAN Ranger is the first local area network management and diagnostic software to take full advantage of the Macintosh graphic interface in monitoring and administering AppleTalk networks connected with FastPath 4 Ethernet gateways. Using icons, *LAN Ranger* automatically creates a logical map of network topology representing available hardware and software resources. It graphically displays internetwork traffic and logs events in real time, saving them for later examination. As a monitoring tool, *LAN Ranger* isolates network traffic trouble spots, pinpointing sources of overload, and displays activity by source, type, and duration. And as a diagnostic and troubleshooting tool, *LAN Ranger* helps a network administrator

to identify and resolve AppleTalk internetwork conflicts using easily understood real-time displays. Currently bundled with Kinetic's FastPath 4 LocalTalk-to-Ethernet gateway, *LAN Ranger* software will be available as a separate product in the third quarter of 1989. Kinetics, A Division of Excelan, Inc., 2540 Camino Diablo, Walnut Creek, CA 94596. (415)947-0998.

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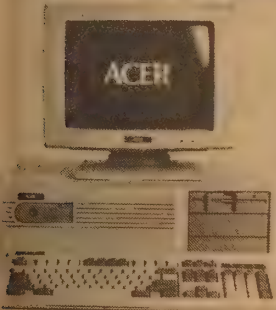


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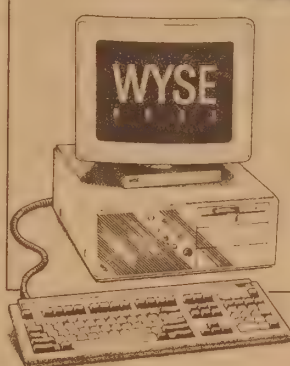
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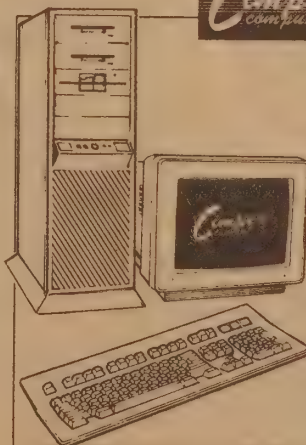
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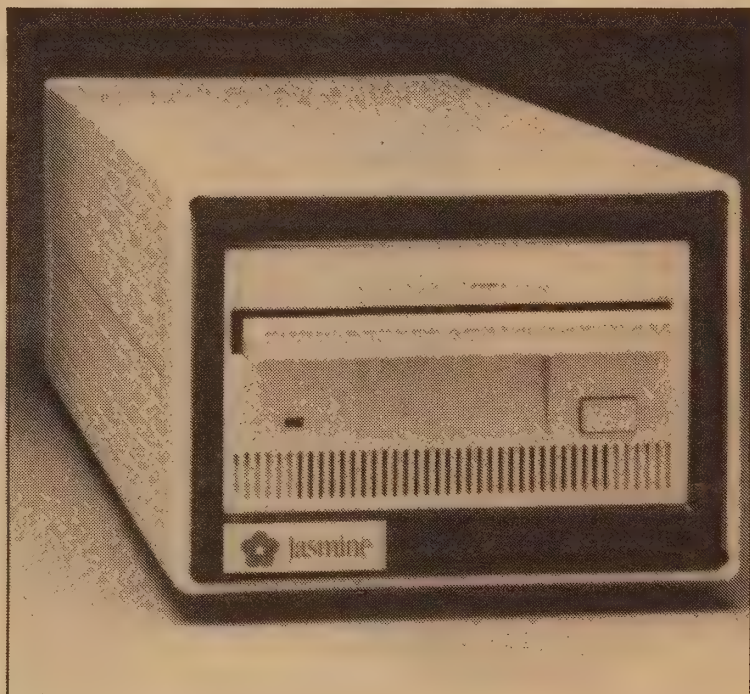
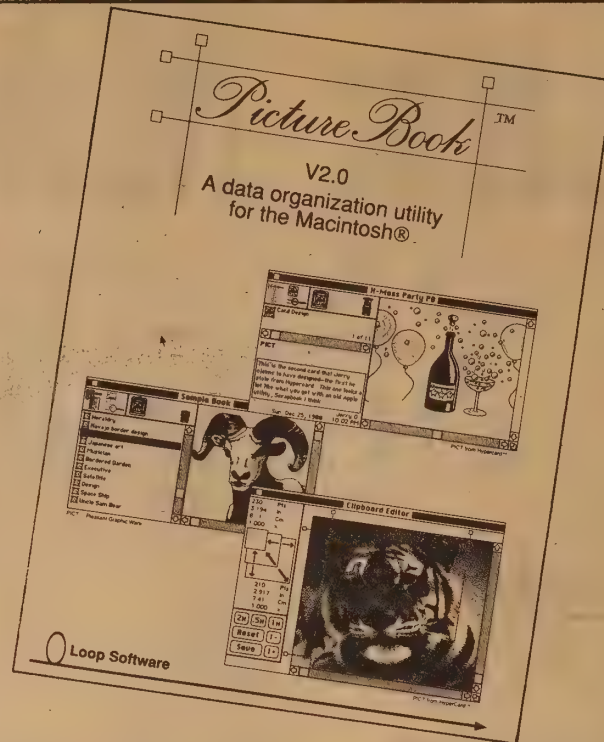
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PictureBook Provides Enhanced Scrapbook Environment

PictureBook 2.0 is a new utility for managing and organizing the Macintosh clipboard. It puts a Finder-like interface for managing multiple clippings together with a PICT editor into a single DA. A later version will support direct handling of EPS files and will be made available as an update. *PictureBook* creates Book documents that contain any number of clippings, pictures, text, sounds, etc. The user can name and annotate each clipping for easy reference while the program automatically tracks creation date, creator name, etc. The PICT editor can be used to magnify, reduce, stretch, or crop PICT items off the clipboard. *PictureBook* is compatible with the Mac 512 and up, and works best with a hard disk. (\$49.95), Loop Software, PO 1249, Menlo Park, CA 94026. 1-800-288-7631.

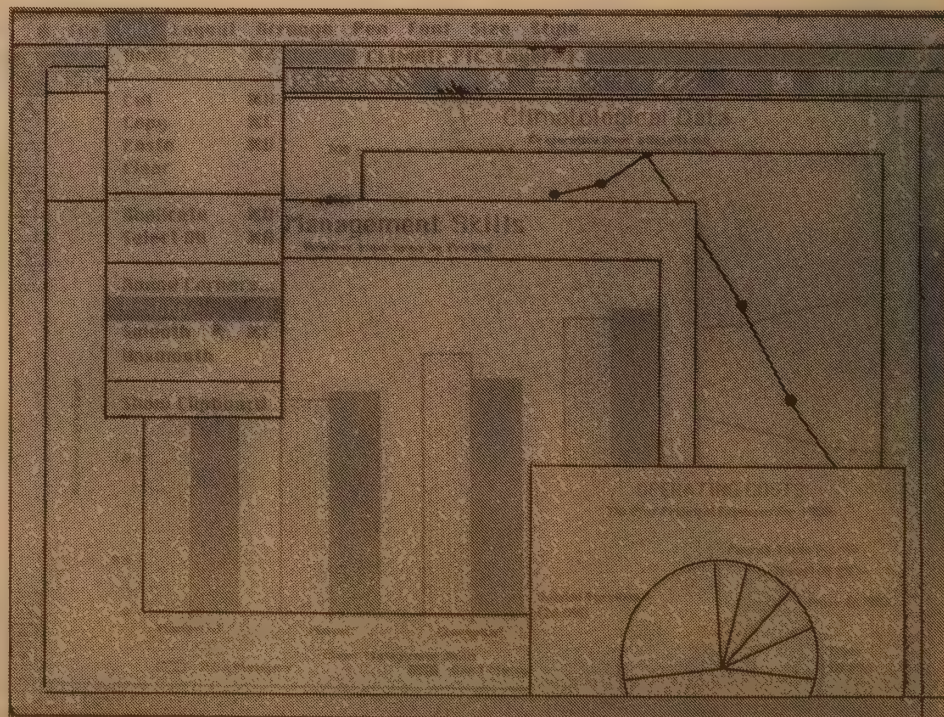


Jasmine Erasable Optical Drive Stores 600 Megs

Jasmine Technologies has recently introduced a removable, erasable optical disk drive that can store up to 600 Mb of data. The Jasmine DirectOptical drive features a 5.25" removable cartridge and full read-write capability. The DirectOptical media are enclosed in a self-opening cartridge much like 3.5" floppies, and the drive's sing laser beam reads, writes, or erases data from the disk spinning at 1800 rpm. Based on a Ricoh drive mechanism, the drive's average seek-time is 50 ms, and the data transfer rate at the SCSI is 1.2 ms. The unit provides extensive error correction and utilizes 256 K of buffer memory for optimum transfer speeds. Jasmine expects the drive to be useful for applications including storage system backup, CAD/CAM, graphics, and music composition, which are typically large, contiguous files. (\$4995) Audrey Leeds, Jasmine Technologies, Inc., 1740 Army St., San Francisco, CA 94124. (415)282-1111.

PICTurePICTure Brings 1-2-3 Graphs Into The Mac Environment

PICTurePICTure is a new file translation utility from C. Carlson that converts *Lotus 1-2-3* PIC graph files into fully editable PICT files. *PICTurePICTure* gives the users of one of the world's most powerful spreadsheet applications access to the superior graphics capabilities of the Macintosh. A 1-2-3 graph becomes a PICT file that can be edited with *MacDraw*, *MacDraw II*, *SuperPaint*, *PixelPaint*, and similar object-oriented graphics programs. The application is also compatible with many presentation graphics programs, and word processing and desktop publishing applications as well. (\$99.95) Carl A. Carlson, PO 3669, Tucson, AZ 85722. (602)628-7389.



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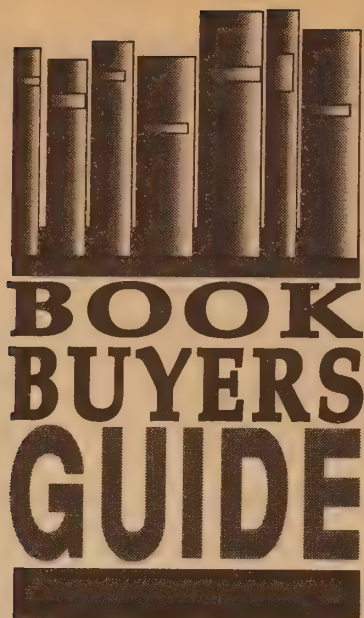
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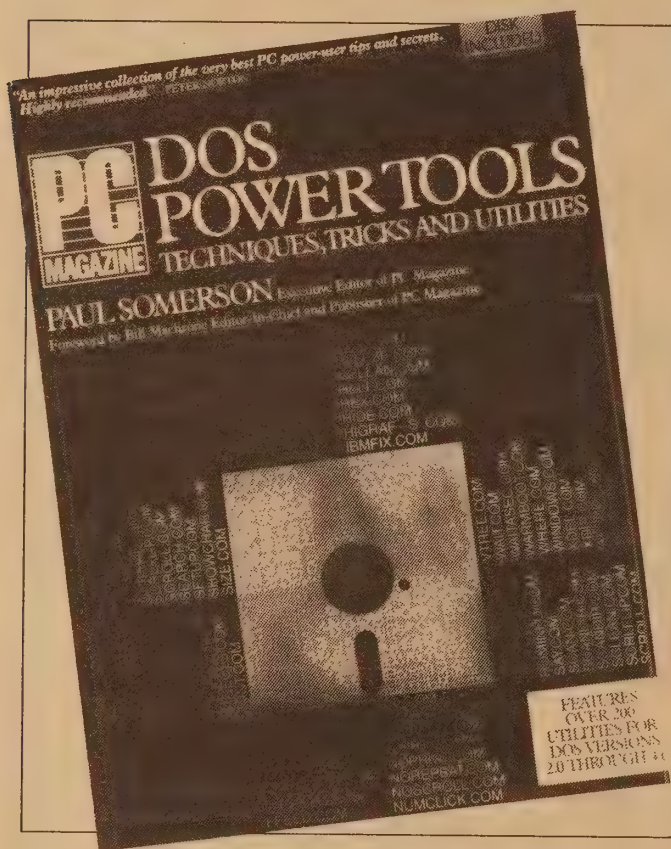
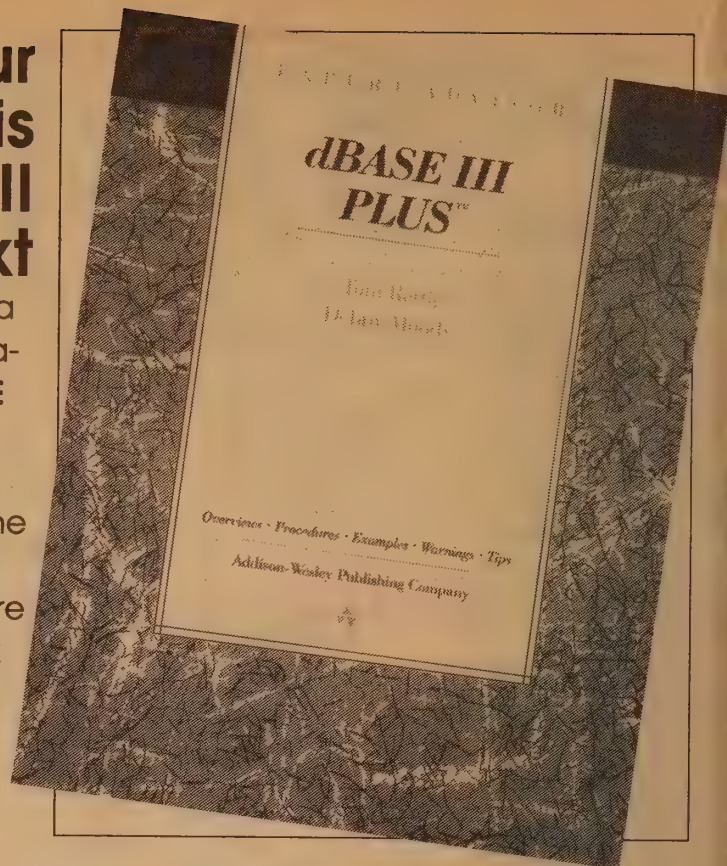
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includes a complete general index in addition to a special index relating all entries by application. (\$22.95) Addison-Wesley Publishing Co., Route 128, Reading, MA 01867. (617) 944-3700.

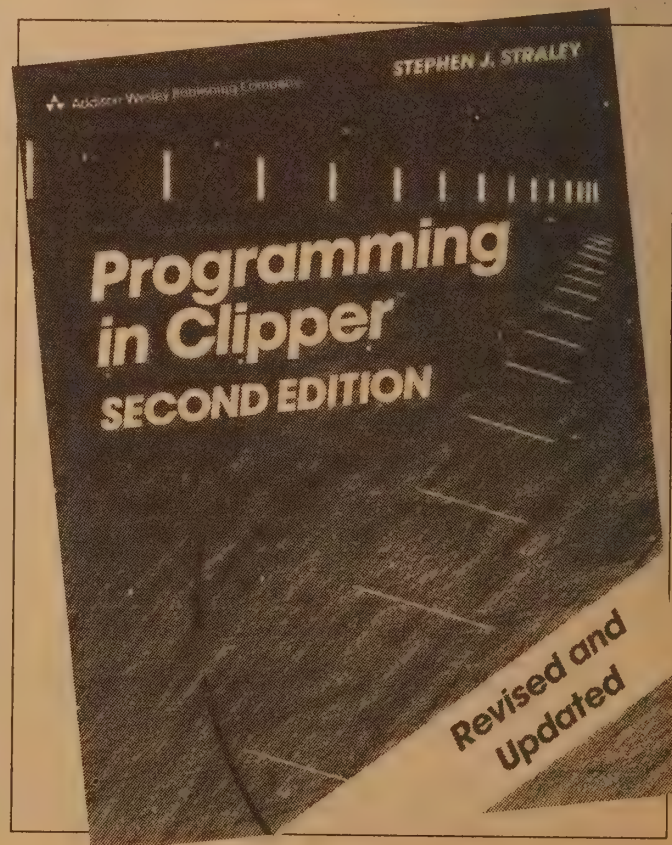


DOS Reference Includes 200 PC Utilities To Speed Your Work

Highly recommended by both computer gadfly John C. Dvorak and PC guru Peter Norton, **DOS Power Tools: Techniques, Tricks And Utilities** is a must-have for the serious computer user. This 1,300 page text, a number one best-seller among computer books, is written by Paul Somerson, Executive Editor of *PC Magazine*. Somerson edited the industry's longest running DOS advice column. With **DOS Power Tools**, you learn how to squeeze extra horsepower out of DOS the way the experts do, and take advantage of 200 utilities that will streamline your work and speed up virtually every PC operation. (\$44.95) Bantam Computer Books, 666 Fifth Ave., NY, NY 10103. (212) 765-6500.

Second Edition Of Programmer's Reference Now Available

When the first edition was published last year, **Programming In Clipper** was highly acclaimed. With publication of the book's second edition, the dBASE programmer now has a resource that covers the most recent version of the compiler, *Summer 87*. **Programming In Clipper: Second Edition** incorporates all the changes made to the most recent version of the language. It includes a comprehensive reference to *Clipper* commands and functions, and it contains hundreds of examples of *Clipper* code, including the source code for a fully functional program and menu generator. (\$32.95) Addison-Wesley Publishing Co., Route 128, Reading, MA 01867. (617) 944-3700.



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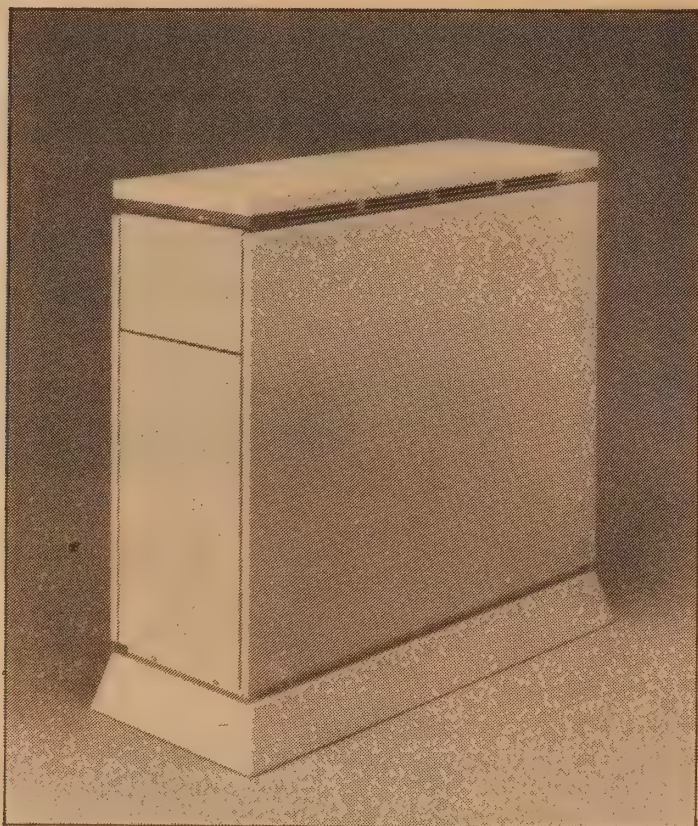
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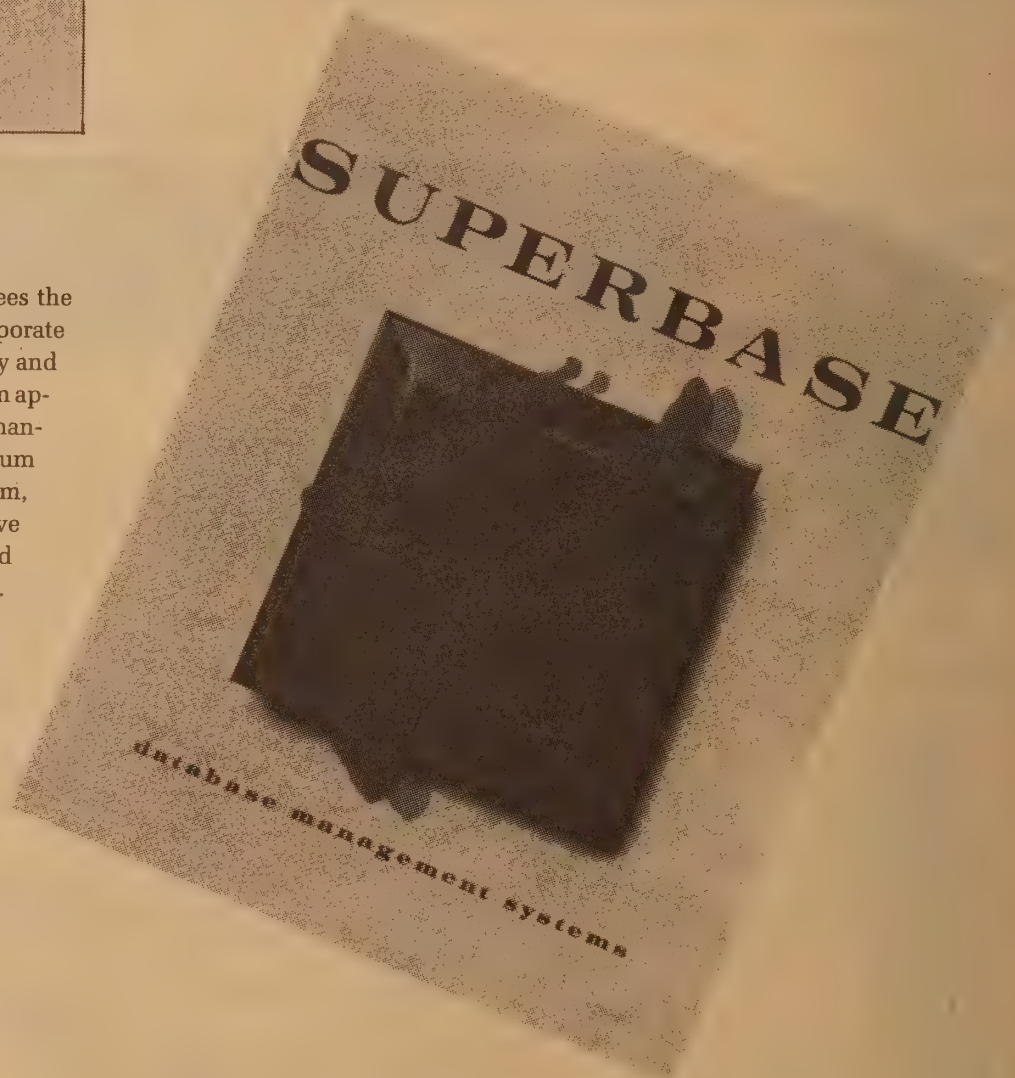


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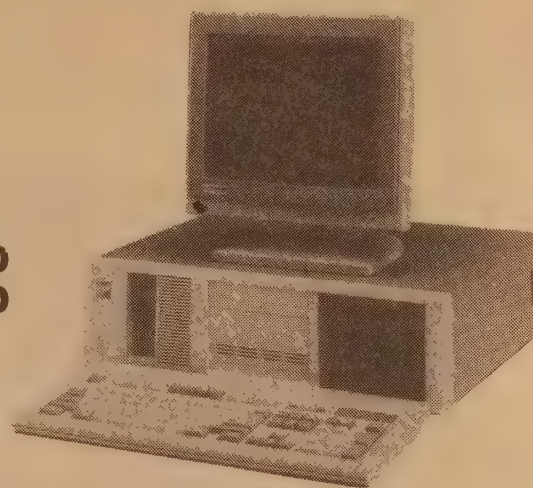
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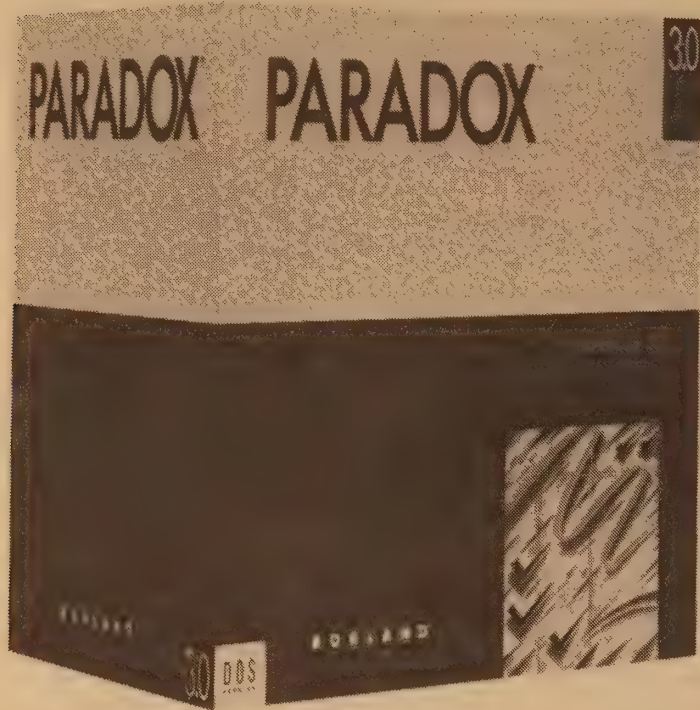
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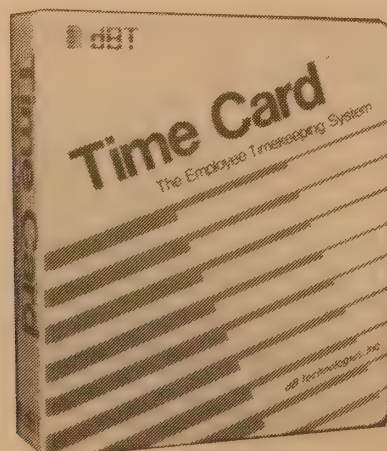
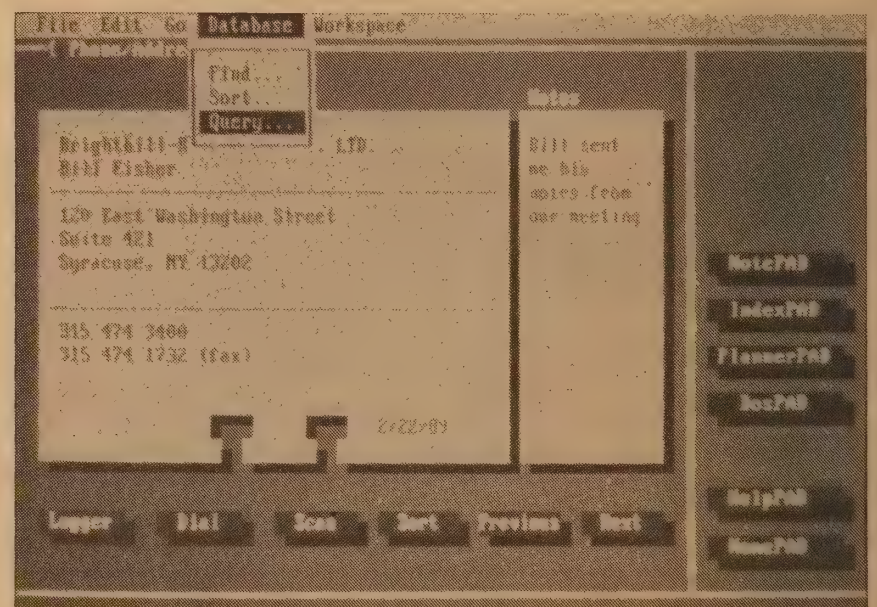


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Paradox 3.0 from Borland International offers new features including enhanced Query By Example (QBE), relational extensions, and presentation graphics. The new QBE features allow users to define very complex queries without the need to program and without adding complexity to the QBE interface. Relational capabilities have been extended to provide users with added efficiency and flexibility in linking information. Multitable and multirecord forms provide solutions for common business problems such as order entry and invoicing. *Paradox 3.0* also provides referential integrity by automatically updating all corresponding values in detail records when a master record changes. New built-in graphics capability allows users to create pie charts, bar charts, line graphs, and many other graphs. Using crosstabs, users can accumulate and summarize information. Using full color customization, information can be displayed in tabular or graphical format using any set of colors the user specifies. Users of any current *Paradox* product may upgrade for \$175. (\$725) Borland International, 1800 Green Hills Rd., PO 660001, Scotts Valley, CA 95066-0001.

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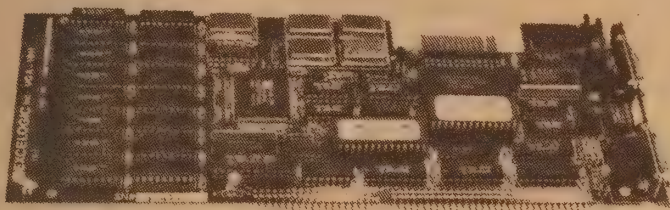
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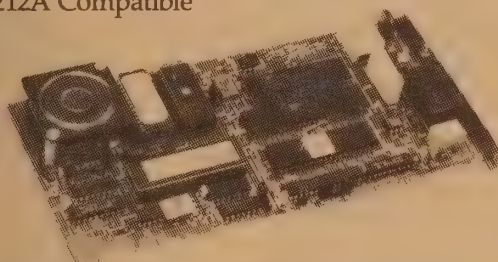
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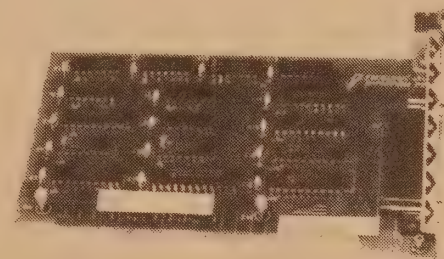
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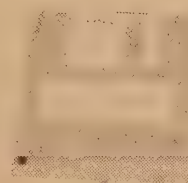
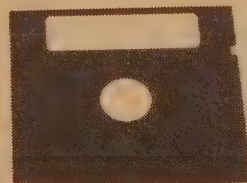
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BY BENNETT FALK

VP/ix: The Mingled Destinies Of UNIX And DOS

AT&T's UNIX operating system will be 20 years old this year. Also this year, the eighth anniversary of IBM's introduction of the DOS-based PC will be observed. UNIX and DOS have become fixtures of the computer marketplace, and, as might be expected, each has had some influence on the direction of the other.

At about the same time that IBM introduced its PC in 1981, UNIX was becoming commercially available on microcomputers. The UNIX micros of the time had at least some specs in common with the PC: 16-bit CPUs running at about 5 MHz. Of course, the personal computer flattered its user with the undivided attention of this CPU, while UNIX, with obsessive frugality, shared the CPU's resources among all the users present. To achieve this, UNIX machines required elaborate supporting paraphernalia that elevated their modest CPUs to the "super-micro" class: a wider data bus, faster memory with a dedicated controller, and faster, larger mass storage devices. But all these things cost money, and in the early part of this decade, prices of multi-user UNIX machines ranged anywhere from five to ten times the price of the single-user PC.

UNIX was enough of a commercial success to be ported to a variety of microprocessor architectures, but it never enjoyed the PC's popularity. In the PC's case, popularity and utility seemed to go hand in hand. The hardware sold well, creating incentive for software developers to write applications for it. The time required to develop a PC application was relatively short, and the rewards were high. Eventually the volume of programs available for the PC became a reason to buy the hardware.

For several years, the enormous success of the PC retarded the progress of UNIX. To the detriment of UNIX application development, software developers became preoccupied with projects to produce PC software. Among users, expectations of performance and ease of use were conditioned by the experience of using a PC, and all too often UNIX applications were found wanting.

But time passed and things changed. Or rather, some things changed while others did not: hardware became cheaper and much more powerful, several varieties of UNIX were ported to the Intel-based PC hardware line, and DOS stayed pretty much the same.

For several years, the enormous success of the PC retarded the progress of UNIX. Software developers became preoccupied with projects to produce PC software. User expectations of performance and ease of use were conditioned by the experience of using a PC, and all too often UNIX applications were found wanting.

Personal computers with 16-25 MHz CPUs, multiple megabytes of memory, and mass storage devices in excess of 40 Mb have become common. DOS, with its limited ability to address memory and modest disk partition sizes, has become a serious bottleneck: it allows only one user to do only one thing at a time with a diminishing fraction of the hardware resources available. Yet so many applications have been written for DOS that, bottleneck or not, it simply will not go away.

DOS Extenders

There is no shortage of strategies to deal with the limitations of DOS. For users of Intel-based systems running UNIX, there are several "DOS extenders" that allow DOS (and more importantly, DOS applications) to be run as processes under UNIX. The Santa Cruz Operation markets Phoenix Technologies' VP/ix to provide access to DOS from XENIX. (VP/ix is available for a number of other machines as well, including Sun Microsystems' 386i. The other major DOS-under-UNIX product on the current market is DOS-Merge, from Locus; which has been bundled with Microport's System V and will be a part of SCO's Open Desktop package available

later this year.)

The most remarkable thing about the DOS extenders is that they truly do work. With VP/ix, XENIX users on computers powered by the Intel 80286 and 80386 processors can run DOS from either the system console or from any serial terminal attached to the system. On 80386-based systems, multiple DOS sessions can run concurrently, each with its own virtual 8086. (It takes more than a little courage to type Control-Alt-Delete to reboot this virtual processor the first time. It does reboot exactly as it should, leaving undisturbed any UNIX jobs running simultaneously on the 386.)

What VP/ix provides is access to DOS 3.2 with support for up to two megabytes of DOS memory through the Lotus/Intel/Microsoft extended memory standard. With proper setup, DOS commands can be executed from the XENIX command line and XENIX commands from the DOS command line. Files can be copied freely between the XENIX file system and DOS disks. VP/ix disk access is particularly ingenious. VP/ix allows DOS disk partitions of up to 32 Mb. Various disk media are supported, including floppy disks, hard disk partitions, virtual disks of various sizes, and directories in the XENIX file system.

Using VP/ix

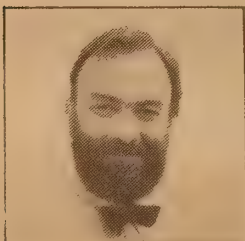
There are some things to be cautious about in using VP/ix. Some VGA boards behave strangely with VP/ix. (The "almost VGA" Zenith 449 card failed spectacularly by crashing XENIX when VP/ix was started.) SCO is committed to supporting the IBM and Compaq VGA boards. The Compaq board works very well. Others may work, but if you're considering a purchase that requires VP/ix and a VGA board, you should discuss the issue of compatibility with your vendor before you buy. Using VP/ix from a serial terminal avoids that hassle, but limits the DOS applications that can be run to character-based programs.

Because it runs as a XENIX process, VP/ix can't provide DOS access to devices that XENIX doesn't have drivers for. FAX boards and other special purpose hardware may not be usable from VP/ix.

Finally, running DOS under XENIX doesn't enhance DOS performance. VP/ix is very CPU intensive. On systems that don't have to support multiple users, it will provide adequate DOS performance, but even a single DOS session will affect the performance of other applications, and concurrent DOS sessions may strain the resources of small systems.

At least part of this CPU load is caused by the "scancode" mapping that VP/ix must do to give character-based PC applications the input they expect.

A regular PC uses keyboard scancodes to track



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Everex Step 386-16	3.93	27.3	19.5
Everex Step 286-16	3.27	21.4	18.4
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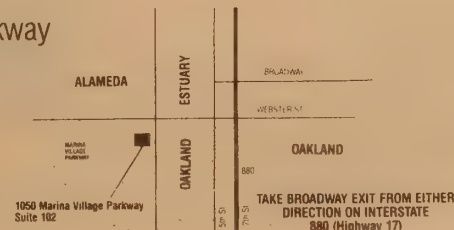
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UNIX and DOS continued

every keystroke on the system console. XENIX, however, like any other version of UNIX, uses ASCII coding for character input from the console as well as from serial terminals. Some CPU overhead is incurred with each character entered to VP/ix as the ASCII representation is translated to its scancode equivalent.

In a casual benchmark, a screenful of text was entered at the system console using the version of vi that comes with XENIX. This took 5:17 and used about six seconds of CPU time. Entering roughly the same amount of text under VP/ix with a DOS version of vi (from Mortice Kern Systems) took 5:26 and used three minutes and 42 seconds of CPU time.

Cautionary items aside, VP/ix works well enough to bring about some peculiar ideological tradeoffs between DOS and UNIX. For character-based DOS applications, VP/ix achieves something like "device independence." These programs, which include most word processors, spreadsheets, and database managers for DOS, have traditionally been bound to the PC's system console with its lone keyboard and a succession of quirky key layouts featuring ten function keys and the mysterious "Alt" key. With XENIX and VP/ix, DOS applications can be run from any serial terminal attached to the system.

Of course, "device independence" is not everyone's cup of tea: learning to use a DOS program from an ASCII terminal takes some effort. And how well DOS works from an ASCII terminal will depend upon on how well the terminal is described in

the UNIX terminal database "terminfo."

Nevertheless, a capacity for running DOS from any reasonable terminal will make DOS applications runnable by more users and potentially runnable by several users at once. In the UNIX way of looking at things it is independence, rather than conformity, that facilitates multiuser operation, and this applies as much to DOS applications slipped in through the back door as to native UNIX applications.

VP/ix does not make DOS software multiuser. There is a subtle difference between a single-user program run by several users at once and a truly multiuser application. To be multiuser, an application must allow several users to have access to the same data simultaneously. At its best, this requires the ability to lock files and records to avoid contention between simultaneous updates of the same piece of data.

VP/ix avoids this problem by insisting that shared resources be "read only." Users running the same DOS application simultaneously will typically not share data because each user works with a different set of resources that are defined in that user's local configuration file.

On the other side of the ideological tradeoff between DOS and UNIX, VP/ix makes UNIX (or, in this case, XENIX) a much more useful system by giving its users a lot more programs to choose from. DOS programs tend to be cheaper and easier to use than their UNIX counterparts. In some cases DOS programs offer more convenience or better use of the hardware. Who but a UNIX die-hard would prefer vi and nroff to WordPerfect 5.0? What has

Users running the same DOS application simultaneously will typically not share data because each user works with a different set of resources that are defined in that user's local configuration file.

been developed for drawing under XENIX that can compare with *Deluxe Paint II*? Is it not more fun to use the nifty development environments in Microsoft's Quick C or Borland's Turbo C to write and debug programs? Who wouldn't prefer *Flight Simulator* to *Hunt The Wumpus*?

It is difficult to imagine that this increased utility will be of much immediate benefit to UNIX application programmers. But UNIX has many capabilities that DOS cannot match, and no matter what their respective futures hold in store, the coexistence of the two systems in one package should make the distinction clear. ■

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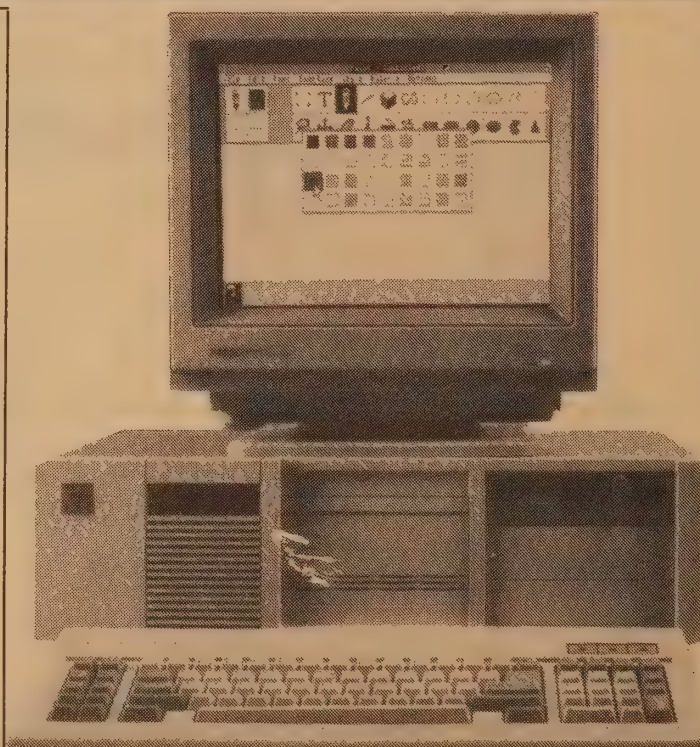
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BUSINESS COMPUTING

BY SUZANNA MUSICK

Computer Consultants And Your Business

Never overlook the personal qualities and organizational talents of the consultant. Depending upon the scope of your project, this person could become a temporary member of your staff, and should be able to get along well with people, possess good organization skills, and be able to motivate others.



Copyright © 1989 by Suzanna Musick. All rights reserved. Suzanna Musick is a Manager in the Computer Consulting Department of Hemming Morse Inc., CPAs. Her experience encompasses a wide range of industries such as distribution, retail, construction, real estate, financial, and professional services.

In this complex, fast-moving world, keeping up with the latest computer hardware or new software program is a full-time job.

For this reason, when you're ready to automate your business, when you need to assess the efficiency and suitability of your current systems, or when you need to expand and alter those systems, you should consider calling in a computer consultant. By asking the right questions and by helping you define your needs clearly, the consultant can help you make the right choice.

Where Do You Find A Computer Consultant?

The best way to locate a computer consultant is to ask for referrals from business associates, professional and trade organizations, computer dealers, and software vendors.

If they have been successful in working with a consultant, your business associates will probably be happy to recommend him or her to you. Those who were not so lucky can also give you valuable advice about what (and who) to avoid.

If you can't find a consultant through a personal referral, try local computer users' groups and your own professional or trade association.

Computer dealers are another alternative. Although dealers are usually the source for computer hardware and software, they do not have the expertise (or the time) to provide consulting services to their customers. As a result, many of them refer business to reputable local consultants who can be relied upon to provide initial training, equipment installation and testing, and ongoing technical support.

Software manufacturers who offer advanced training to software dealers and consultants may also be able to supply you with the names of local consultants.

How Do You Evaluate A Computer Consultant?

A meeting or interview is an absolute prerequisite. If, in your first meeting, the only thing you hear is computerese, we strongly advise you to consider another candidate.

Ask the consultant how they plan to structure the project. Will they write an agreement letter breaking the work to be done into measurable phases, and provide a cost estimate for each phase? Do they

Software manufacturers who offer advanced training may also be able to supply you with the names of local consultants.

indicate how payments are to be made and how project overruns will be handled? Do they supply a project timetable? Finally, will they provide periodic reports on the progress of the job?

Does the consultant make a profit on the sale of recommended hardware and software?

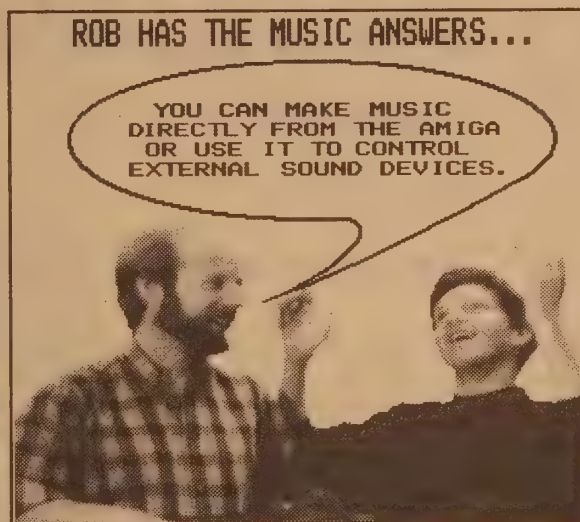
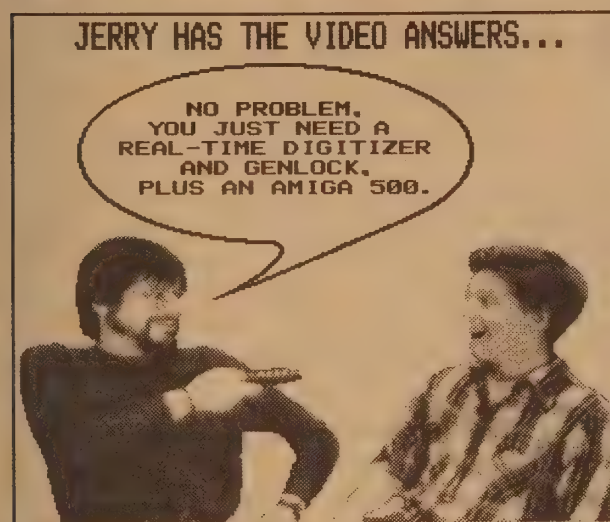
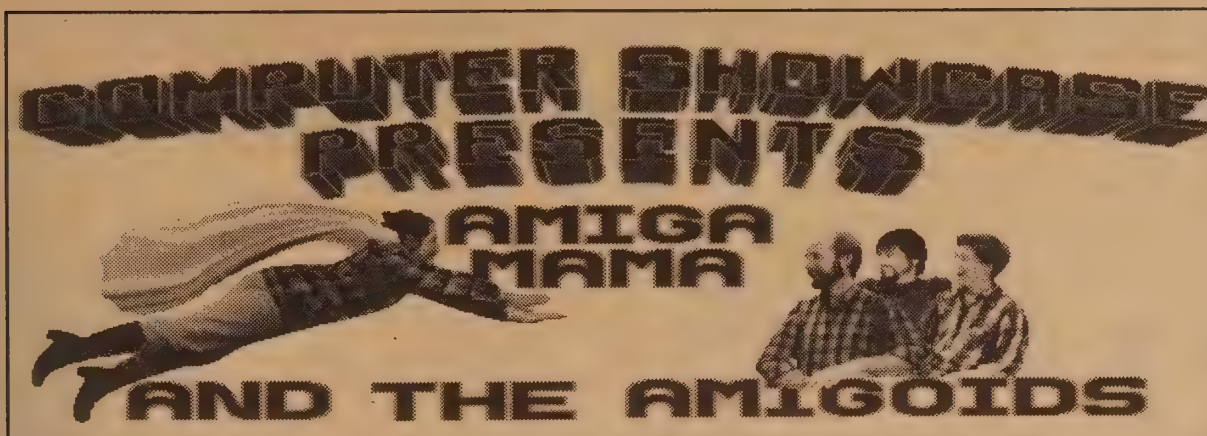
Does the consultant belong to professional organizations? Where, when and how did they receive their training, and what are they doing to stay abreast of the market? If they work alone, what happens to you if you have a problem and they aren't available?

How well can the consultant apply his or her expertise to your particular problem? The consultant should not only understand computers but be able to translate and apply that knowledge to your particular business. They should also have some specialized knowledge of the category of software they will be installing for you.

Never overlook the personal qualities and organizational talents of the consultant. Depending upon the scope of your project, this person could become a temporary member of your staff, and should be able to get along well with people, possess good organization skills, and be able to motivate others.

Finally, as with anyone else you might hire, always check references. What do previous clients say about a consultant's work? Did the consultant do the promised work on time and within budget?

If you follow these general guidelines, you will maximize your chances of selecting a consultant who does a thorough job, and make the experience of automation both pleasant and successful. ■



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Amiga Mama by George Christensen. This ad was produced at Computer Showcase with the FrameGrabber, Comic Setter, DigiView, DeluxePaint and Professional Page on an Amiga2000, and was printed on a Linotronic L100 at Giraffe-X Desktop Publishing, 1826 Divisadero St. San Francisco.

BY MATTHEW LEEDS

Springtime Follies

Spring has arrived in the Bay Area, and with it comes the disturbing influences of pollen, hormones, and warm weather, tempting even the most stable of us to fall prey to the foibles of fancy. This certainly seems to be the case regarding a series of press releases I recently received from Useless Technologies regarding their entry into the Amiga market.

Their first product, the 3.5" disk notcher, is touted as a means to double the data storage capacity of an Amiga floppy disk. According to Useless Technologies president, John Dough, "By cutting a small notch in the side of the disk, you can flip the disk over, insert it in your disk drive, and write data to the backside of the disk. Developed originally for the Commodore 64, this inexpensive accessory can save you hundreds of dollars on diskette purchases."

A second press release explains their first software product, *FlickerStop*. "We noticed that a great number of software programs on the Amiga made use of the interlaced mode. This caused a very annoying flicker on the screen. We examined several other companies' solutions to this problem, and concluded that they were either too expensive to clone, or that they were already selling too close to their cost of goods for us to make a profit by undercutting their prices with a similar product. Our software engineers came up with a solution: *FlickerStop*. This is a small program that you run in your startup-sequence. It intercepts any attempts by other applications to enter the interlaced display mode, and nullifies them. This eliminates all flicker on the Amiga. *FlickerStop* only uses 400K of chip RAM, and cannot miss another application's attempt to run in interlaced mode as it BusyWaits while checking for this type of call."

Other products from Useless Tech include a PCjr emulator and the CerealBox, an interface adapter that connects to the parallel, serial, and floppy disk ports of an Amiga and lets you use Commodore 64 peripherals. John Dough explains, "We did a market survey and found that there were a large number of Amiga owners who wanted to use their C64 peripherals on their Amiga. Although we were never able to understand why, our marketing department decided that this was far too large a potential market for us to ignore. We developed the CerealBox to meet the perceived needs of this disposable income group. The CerealBox allows the

All of the products announced by Useless Technologies will ship within two weeks of April 1st, or Real Soon Now.

user to connect a Commodore 1541 disk drive to an Amiga, bringing back the coffee break while loading an application. It also lets you use the model 1600 modem, and the 1525 printer. Why anyone would want to use a 300 baud, non-autodial modem was beyond us, but if there are people out there with money, well, I'm sure you understand."

All of the products announced by Useless Technologies will ship within two weeks of April 1st, or Real Soon Now.

Deluxe Paint III On The Horizon

On a more down-to-earth note, I've received from Electronic Arts a pre-release version of *Deluxe Paint III*. It is a final version, minus the fancy disk labels and packaging. I've just started using it, and will write a more in-depth report in the near future.

A couple of quick impressions: it has gotten much bigger, from around 180K to 288K; you'll need a megabyte of RAM to get any useful work done. It's got the best system for handling fonts I've seen for any application on the Amiga so far—you can set a path to any font directory at any time, and preview the font in a window in the font requester. It now can create animations, and comes with a very nice ANIM player. (A side note—it seems that every other company that supports ANIM's does not support Aegis's use of two extra frames at the loop point in an animation. This causes an animation created with *VideoScape* but played with their players to "jump" at the loop point. This has got to change.)

Amiga Plus Debuts

A new Amiga-specific magazine has hit the stands: *Amiga Plus*. Produced by Antic Publishing, it has been positioned as a competitor to *AmigaWorld*. The first issue looks good, with articles from Bay

Area authors Lion Kuntz, Richard Repas, Michael Lehman, and Jim Kent (plus yours truly). The magazine is available in two versions, with or without a supplementary disk. Included on this issue's disk is *Kamikaze Chess*, by Jim Kent. This is a twist on the standard game of chess in that you win by losing all of your pieces first. It takes a real change of thinking to play well, and can ruin your regular chess game for ever.

Distant Armies

Although I don't cover games on a regular basis here, the timing of my receipt of *Distant Armies* by Eagle Tree Software (producers of *Butcher*) makes for a perfect tie-in. If *Kamikaze Chess* sounds intriguing to you, consider *Distant Armies*. This is a survey of ten antecedents to modern chess, including Chaturanga, a sixth century Indian version, and Byzantine Chess, played on a circular board. *Distant Armies* provides all the standard computer chess features—saving games, customizing screen colors, setting the level of difficulty, two- and three-dimensional views, preview of all legal moves, on-line history, rules, and help for each version, and the option of playing against the computer or another opponent. A most enjoyable and worthwhile look at the history of chess.

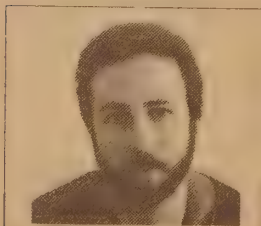
I've started a new job, working for a local software company. I'll be making my usual disclaimer, notice of potential biases and that sort of thing next month. What I do want to mention now is that this new job has me using Macs and IBM clones (I'll refer to them as DOS machines) on a regular basis. I intend to compare and contrast both operating systems and applications as they relate to existing products on the Amiga, and as their features and functions are relevant to improvements that could be made to the Amiga and its family of third party hardware and software.

No, I don't intend to switch to another machine at home, but since I will be spending most of my time at work (what, you thought I did this column for a living?) writing on a Mac, I feel that I will be able to note some of the important differences, pro and con. There is room for much improvement in the Amiga, and you may be surprised by how many developers are looking at the Mac as a source of ideas, including the software engineers inside Commodore. ■

Resources

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San Francisco, CA 94107

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Hopewell, VA 23860
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Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields.

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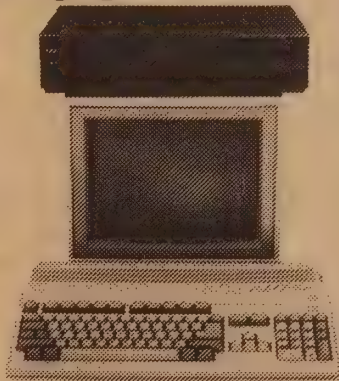
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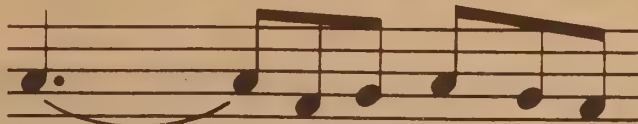
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ATARI ST

BY DAVID HAWKINS

Atari And The Federated Debacle

More Info Resources

The *Wall Street Journal* reports that Atari Corporation lost \$97 million in the last quarter of 1988, including over \$100 million from writeoffs and reserves charged to the Federated Group subsidiary.

Atari would have had an operating profit of \$9.3 million if it hadn't been for the Federated losses. This still would have been down from \$21 million, with the drop being attributed to high RAM chip prices.

Evidently Atari will spin off the Federated Group, which will prevent future losses. There is also a lawsuit in process against the former owners/officers of Federated.

The Lesson Being...

One of my favorite quotes is, "All I learned from experience is that it didn't teach me anything." (Source anonymous). It will be interesting to see what Atari has learned from this excursion into the retail world.

Another Note

The *Wall Street Journal* article also quoted an Atari spokesman as saying "that a number of new items designed to complement the existing ST and MS-DOS product lines will be announced this year." Also, RAM chip prices are dropping.

Back To Information

Last month I talked about some of the ways to get more information about using your Atari. (Things like: talk to your dealer, visit user groups, log on to conferencing systems, etc.)

Another way to learn more is to read magazines. But often magazines are hard to find. Some dealers don't carry magazines because people come in and look at products and get advice and then order what they're interested in from the ads in the magazine. Personally I would suggest that if you use the services of a dealer, then follow up by buying your software and hardware there. (End of sermon.)

So this month I'm going to mention a couple of magazines that you might not have seen. Two are from Great Britain and one is from the US.

ST World—UK

The first of the English magazines is *ST World*. A quick check of the February 1989 issue shows

Some dealers don't carry magazines because people come in and look at products and get advice—then order what they're interested in from the ads in the magazine. If you use the services of a dealer, then follow up by buying your software and hardware there.

articles on desktop publishing, public domain software, books on the ST, the new operating system (TOS 1.4), MIDI, database systems, Microsoft *Write*, and programming. There is also a wide range of product reviews.

The articles in *ST World* are very well written. I felt that the editing and layout were better than that of any of the US Atari magazines.

To subscribe to *ST World*, you can write to Dept, STW Subs, Gollner Publishing Ltd, 10 Theatre Lane West Sussex, PO19 1SR, England

The phone number is (0243)533575, and a year's subscription is £39. (I have no idea how much £39

is in US dollars, but it is helpful when reading the magazine to remember that they are using pounds, not dollars.)

Atari ST User—UK

The other English magazine is *Atari ST User*. It's a little flashier than *ST World*. If you prefer *USA Today* over the *Wall Street Journal*, this is the one for you. It still covers a wide range of subjects, but in a more dramatic way.

For example, the January 1989 issue covered ST use in art, business, education, and programming. There was also a section on how beginners can start to use the ST, as well as a number of reviews on a wide range of new products.

Frankly, I'm a real stick-in-the-mud, and *Atari ST User* is a bit too bright for me. But if I were giving a magazine to someone with more energy, this would be the one. It is well written and well organized. I'm sure Joe Bob would give it four stars and tell you to check it out.

The subscription page was so bright I thought it was an ad and missed it the first time through. The 12-month subscription is £42.99, which can be sent to Database Publications, FREEPOST, Macclesfield, Cheshire SK10 4YB. The phone number for credit card orders is (0625 879920); it's available 24 hours a day. I'm sure if you give them a credit card number they can work out what that comes to in dollars.

ST WORLD—US

The US magazine I like to follow is *ST WORLD*. The writing is good and is always informative. For example, the March 1989 issue had articles on CADD (computer aided design and drafting), *Prospéro Pascal*, MIDI Recording Studio v 1.1, and tips on using *Fleet Street Publisher*.

The main reason I read *ST WORLD* is for David Small's column. Small is the person behind the Magic Sac, Translator One, and Spectre 128. In this article he talks about details involved in designing the Spectre GCR.

The Spectre GCR is to be the first "plug and play" Macintosh emulator for the ST. It will allow the user to plug in the emulator and start using Mac disks in the Atari. Small hopes to get the product out in April of this year.

The column is interesting from a programmer's standpoint because Small deals with the problems of using Mac disks in the Atari disk drive and how he handles those problems. Small had released a product earlier that did this—the Translator One—but it was slow. So the Spectre GCR adds a real speed improvement to handling Mac disks and Small explains how he does this.

To subscribe, write to *ST WORLD*, 1385 Cleveland Loop Drive, Roseburg, OR, 97470-9622 or call (503)673-2259. A one year subscription is \$18. ■



Copyright © 1988 by David Hawkins. All rights reserved. David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco, both monitors, an Okimate 20 color printer, and disks all over the room.

Music for your home.

Kurzweil Ensemble Grande Mark III

The first thing you'll notice about the Kurzweil Ensemble Grande Mark III is its elegant styling. Sleek lines and a lustrous dark rosewood finish make this instrument the perfect complement to any decor.

Then there's the weighted, velocity-sensitive keyboard. Its subtle responsiveness leads to a delightful discovery- the Ensemble Grande Mark III feels and sounds every bit as beautiful as it looks. Lush, sonorous string sections. Bold brass. Even majestic, multi-voiced human choirs. Not electronic imitations like you find on most home keyboards, but the finest reproductions of acoustic instrument sounds today. The Mark III, you see, boasts many of the same high-quality, digitally sampled sounds found in the Kurzweil 250- an instrument widely used by both recording studios and performers around the world.

Command Performance

Located right above the Mark III's 88-note keyboard, a streamlined control panel makes it easy to summon any of the instrument's 100 presets. Simply push a button to call up a sound. Then take that sound and choose any of 9 other variations just by pushing another button. You can further personalize the sound effects like Chorus, Tremolo or Vibrato.

The Mark III even provides preset selections that combine instruments' sounds, such as grand piano on the right half of the keyboard and acoustic bass on the left half. It's multi-timbral too, which means you can play more than one sound at a time- piano layered with strings, for example. And with 24-voice polyphony, you'll hear sonic depth and complexity like you've never heard before.

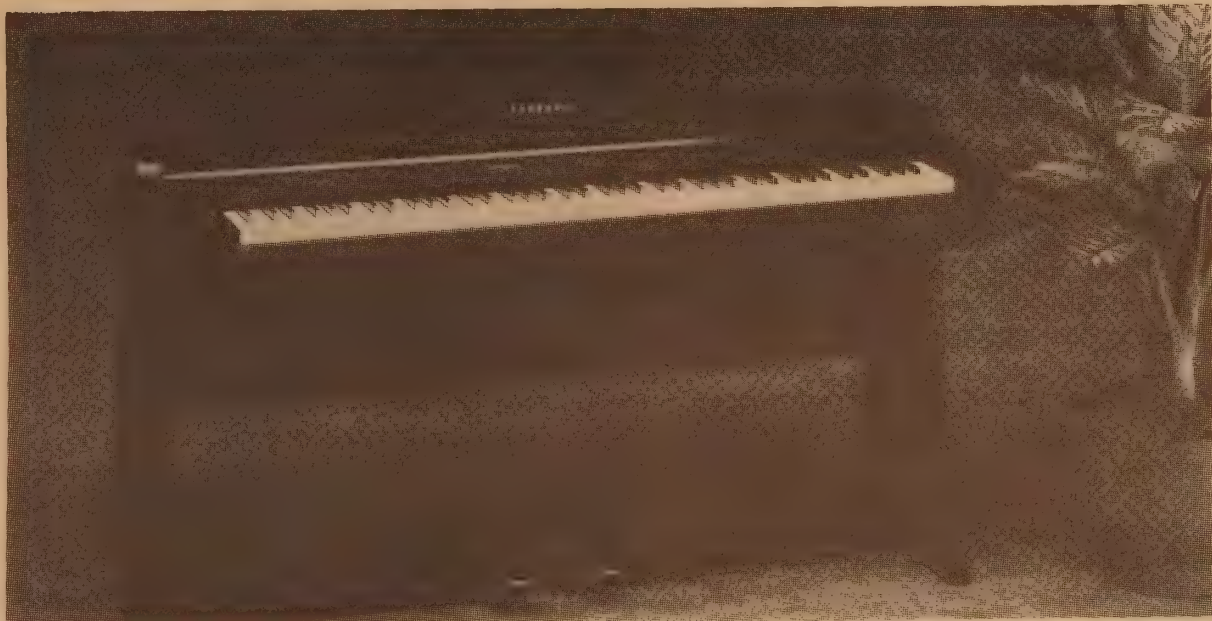
The MIDI Connection

The Ensemble Grande Mark III is a wonderful self-contained music system, whether you use its own powerful, high-quality speakers or connect it to an external sound system. But beyond that, the Mark III is equipped with a MIDI interface. MIDI (the Musical Instrument Digital Interface) is the standard that has been developed by manufacturers to allow their products to "talk" to one another. A single cable is all it takes to connect the Mark III to any MIDI-equipped external device, such as a sequencer, computer or other musical instrument- like the Kurzweil Ensemble Expander- for even more sounds.

But chances are the 100 phenomenal sounds and beautiful styling of the Kurzweil Ensemble Grande Mark III will be enough to keep you smiling for a long time to come.

Yamaha PF85

The Yamaha PF85 Electronic Piano - a well designed, easy-to-use electronic piano that performs equally well in the studio, on stage or in the home. With a velocity-responsive 88-key keyboard, plus five rich voices, it suits the professional who requires a high-quality keyboard on which to perform or compose. It has built-in



Kurzweil Ensemble Grande Mark III

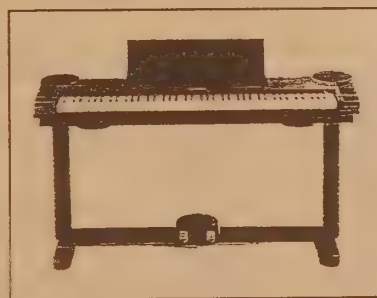


Yamaha PF85

speakers and an operating layout that makes it ideal for the advanced amateur who wants an expressive electronic piano. The PF85's MIDI compatibility and performance specifications make it a wise choice for keyboard players of all levels.

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- Advanced Wave Memory tone generation, for the most natural, realistic sound possible.
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- Three digital reverberation programs for adding depth and ambience to the sounds of the PF1500.
- Full MIDI compatibility for musical applications and setups.
- Attractive combination cabinet and stand construction with a modern, stylish appearance to grace any interior.



Yamaha PF1500

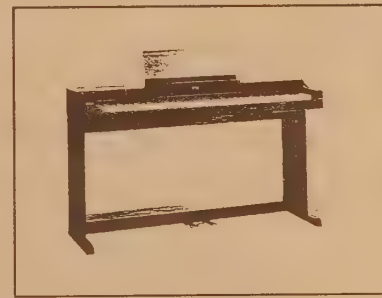
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BY MIKE MARKOWITZ

AppleWorks GS Strikes Out

The usual situation in personal computing is that software lags a year or two behind hardware. The Apple IIGS is a peculiar exception, and to understand why the release of *AppleWorks GS* has been such a bitter disappointment, we need to consider some of the factors that make the GS such a retarded system. I use the term "retarded" in a very specific and concrete sense—the GS is a developmentally disabled computer. Compared to its competitors it suffers from some serious physical handicaps, which can be overcome only by massive infusions of love and money from Apple and the developer community.

Since *AppleWorks GS* (AWGS) was released in November, the bulletin boards of Appledom have reverberated with howls of anguish from users. AWGS is a very important product. It is a sort of flagship, carrying the hopes and fears of a new operating system GS-OS. Along with the usual bugs expected with any first release of a large and complex new program, AWGS inevitably takes a few hits for bugs and problems in GS-OS. The *AppleWorks* name was enough to ensure some big initial sales, but the program's shortcomings raise some serious doubts about its future.

AWGS simply demands more than the IIGS hardware is able to deliver, at least for systems most users are able to afford right now. The original 8-bit *AppleWorks* was a phenomenal success because IIE and IIC owners could use it right away to do useful work without having to make major investments in hardware. This is simply not true for AWGS.

AWGS is slow. Claris wrote a special new driver for the ImageWriter II (the printer most GS owners bought) that is excruciatingly slow to print even the simplest document. The AWGS database is full of problems, especially for users porting their data over from 8-bit *AppleWorks*. The AWGS communications module is klutzy and uses a poorly legible typeface. You cannot automate BBS log-on procedures, direct output to the printer, or do a great many other things that telecommunications people take for granted on their 8-bit software. AWGS demands all the memory you have on a 1.25 Mb system (the minimum configuration is the 256K on the GS motherboard, plus a fully-populated 1 Mb memory card). To be safe, you even have to disable

AppleWorks GS simply demands more than the IIGS hardware is able to deliver, at least for systems most users are able to afford right now. The original 8-bit AppleWorks was a phenomenal success because IIE and IIC owners could use it right away to do useful work, without having to make major investments in hardware. This is simply not true for AWGS.

the little 32K RAM cache that GS-OS creates.

The slowness problem afflicts almost all 16-bit software for the IIGS. This is because the IIGS is trying to do nearly as much work as a Macintosh,

with a processor that runs at one-third the clock rate (the ratio is actually close to 2.7977).

Just consider the screen display. In Super-Hi-Res graphics, the IIGS has to manage 64,000 pixels, four bits deep (16 colors). A PC-XT, running at twice the clock rate with muddy CGA graphics has the same number of pixels, only two bits deep (four colors). A Mac SE, running at three times the clock rate, paints about 175,000 pixels, one bit deep (monochrome). A color Mac II has about six times the speed, and five times the pixel-count, with 16 times as many display colors.

AppleWorks GS has a remarkable graphics module that combines bit-mapped ("paint") and object-oriented ("draw") features in a smooth, seamless way that even a top-notch Mac program would be proud to have. But the slow pace at which the screen is redrawn makes using this module about as much fun as watching paint dry.

No one should buy *AppleWorks GS* unless they have a hard disk, or plan to get one Real Soon. This enormous program (three disks) marks the end of the Floppy Age for the IIGS. Most IIGS owners still only have one 3.5" and one or two 5.25" drives. The very high cost of Apple hard disks and the lack of standardization in third-party hard disks have been a major barrier to the success of this system. If Claris wanted to score some points on customer satisfaction, they would arrange to bundle *AppleWorks GS* with a low-cost internal hard disk, like the Applied Ingenuity Inner Drive. Nobody who has to run this program from a floppy-based system is going to be a satisfied customer—there is too much disk swapping, and files take too long to load or save.

The most charitable thing to say about *AppleWorks GS* is that it was released in anticipation of faster hardware. For present GS owners, help is on the way, in the form of an Applied Engineering accelerator card, the TransWarp GS. The long-delayed TransWarp, which will sell for about \$400, replaces the 65816 microprocessor of the IIGS with a new one, about three times as fast.

Unless Apple is simply prepared to let this computer family die a lingering death, it will have to do even better than this on future GS systems. The last of the last of the 8-bit machines, the little IIC Plus, showed that Apple's engineers can wring a remarkable speed increase (400%) out of an old design. It should not be impossible for such talented engineers to bring out an inexpensive card that would boost the performance of the GS, perhaps by providing a math coprocessor, a graphics processor, and some high-speed cache memory. The GS was designed with plenty of room for future growth, but unless some product champion emerges out of the Byzantine power struggles in Apple's Cupertino headquarters, it seems doomed to a long, agonizing decline. ■



Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II computing since 1984. You can reach him on AppleLink (MOUSKOWITZ), or GEnie (M.MARKOWITZ), or The Source (SIG 060). Copyright 1989 © Mike Markowitz. All rights reserved.

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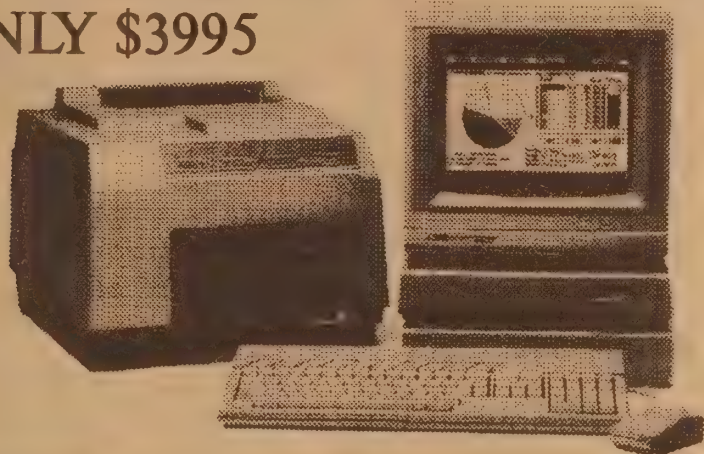
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USER GROUP NETWORK

BY MARY EISENHART

Dudes At The Faire

One of the nice things about the Computer Faire is that it's a great place to meet people who used to be just names on a page. So it was quite delightful, meandering among the exhibits, to run into none other than **Mike Lehman** of Southern California's famous **South Bay Amiga Dudes**, who'd made the northern jaunt to the Faire. Mike reports that the group is growing fast and now includes at least one member of the female persuasion. And if you're interested in joining this fine bunch of Amiga enthusiasts, or visiting them next time you're in LA, Mike invites you to give him a call at (213)370-6008.

Various more local user groups were out in force at the Faire also, and it was great to see them. Although there were idle threats from the **WELL's Sunday Nerds** about a dim sum brunch in the **BMUG** booth, no such event materialized. Possibly because it would have been quite difficult to fit even one more person in the **BMUG** booth...

While we're talking about events, the **Associated Students of Foothill College**, the folks who bring you **KFJC**, one of the better radio stations in these parts, are pleased to announce that for the last three months they've been holding a **Computer Swap** on campus, with the help of several community service groups. The event takes place on the first Saturday of the month in the Foothill College Campus Center, from 9 am to 3 pm. If you've got something you'd like to sell or would like vendor info, call (415)857-1107. And if you've got some shopping to do, good news—the Foothill Computer Swap is free to all buyers. This information comes to us from **ASFC** president **Frank De Safey**. (Foothill College is located at 12345 El Monte Road, Los Altos Hills. Phone number is 415/960-4281.)

If you've been heading off to Fort Mason in search of meetings of the **San Francisco PC Users Group**, you may have noticed that the group's not there any more. All is not lost, however; **SFPCUG** has just moved to its new location at the **UCSF Laurel Heights Conference Center**, 3333 California Street in SF. Meetings are still on third Mondays, now at 7:30 pm. Further information is available 24 hours a day at (415)221-9166.

Bill Strouse sends us a slew of new listings for various groups and BBSes he's involved with which just had their prefixes and phone numbers changed in the latest reorg from the phone company. **PRACSA**, the **Public Remote Access Computer Standards Association**, a group for sysops and users, meets on second Wednesdays at 6:30 pm at **Coco's Restaurant**, 1305 S. Mary in Sunnyvale. The **Silicon Valley Novell User's Group** does likewise, but on a different date Bill didn't mention. However, what he did mention was his phone number, (408)453-3321, which he invites you to call between 10 am and 5 pm for further info.

Bill operates a 24-hour BBS at (408)453-3326 that includes the **Enable BBS**, the **PRACSA BBS**, and the **SV Novell Users Group BBS**. There's also another **PRACSA** board at (415)948-2513.

Bob Matthews, a man who leaves nothing to chance, having sent us his listing both by fax and by Snail, invites the technoids to check out his **True Hacker BBS** at (408)985-0773. In true hacker fashion it operates 24 hours a day (8-N-1, 3/12/2400). It

is, says he, "dedicated to the free exchange of public domain source code."

Nick Barcet, president of **HayMUG**, the Mac user group in Hayward, sends along this news about the club's BBS: "The HayMUG BBS is now equipped with a 2400 baud modem, and a new 40 Mb hard drive extended our total capacity to 70 Mb. This allowed us to have more space to create new file and forum sections (Programming, MS-DOS, Games...) and to install online multiuser games: Empire, science fiction; Dungeons & HellHeaven, Dungeons and Dragons-like; and finally Amoeba Wars, a multiuser remake of the game of Life!" All this is available to you at (415)881-2629, so go for it!

At last month's conference of the **Legal Assistance Association of California**, held in Los Angeles, the Public Interest Clearinghouse announced the formation of **LegalAid/Net**, a valuable resource for law offices providing free legal services to disadvantaged clients such as the homeless, disabled, and elderly. "Not only will attorneys and advocates have the ability to transfer documents from one part of the state to another in a matter of minutes, they'll also have immediate access to briefs, updated case law, reference materials, computer technical assistance, and other resources critical to the day-to-day operation of their offices," says **David Goldsmith**, coordinator of the project. Adds **Mary Viviano**, the Clearinghouse's executive director, "It is nearly impossible to achieve equal access to justice for the poor when there is such unequal access to technology. The goal of LegalAid/Net is to tip the technological scales in favor of the disadvantaged clients represented by California's legal services agencies."

Several national organizations and other legal services offices are already on the net, which has been aided by donations of hardware and software from Apple Computer and other public and private sources. If this sounds like a good resource for your law office, you can get more information by calling either **David Goldsmith** or **Mary Viviano** at (415)565-4695.

That's about all for now. Please keep the news coming—send US Mail to User Group Network, 5951 Canning Street, Oakland, CA 94609, fax to (415)652-4618, and email to microx on the **WELL** (415/332-6106) or {pacbell, hplabs, ucbvax, apple}!well!microx from Usenet. We also cheerfully accept faxes at (415)652-4618 and (213)467-5486. ■

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Terrapin Station. (203) 656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

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Bertha Board BBS. (209) 239-

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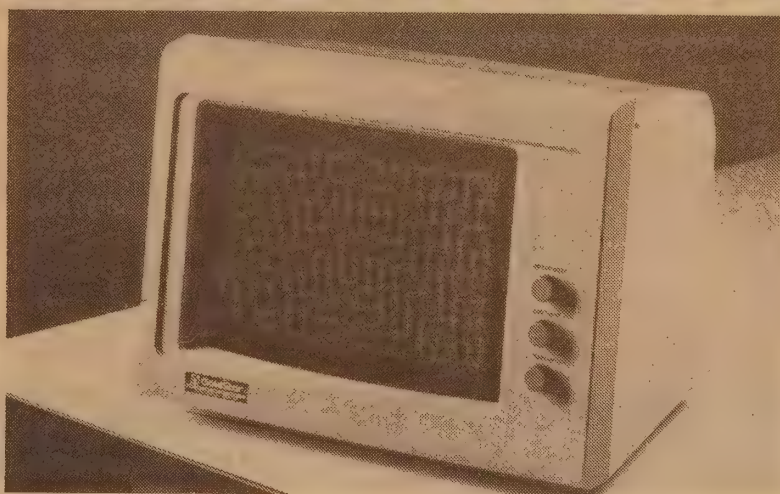
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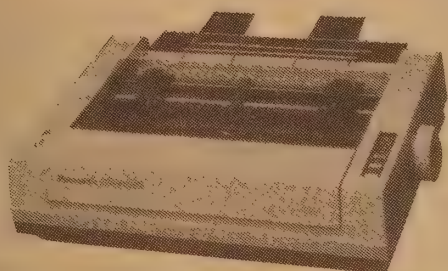
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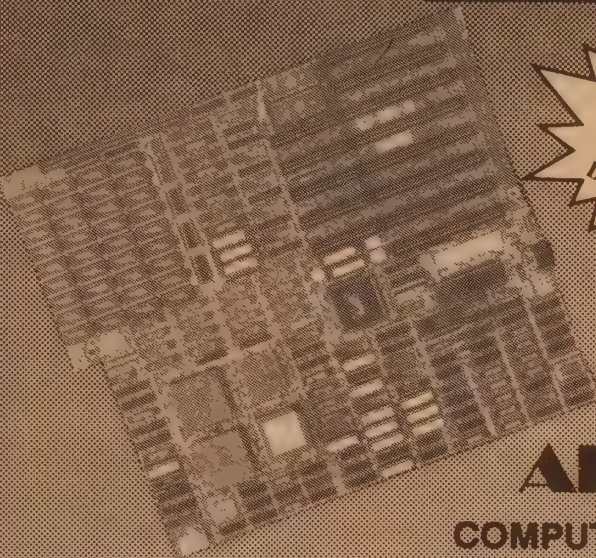
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The Exchange. (408) 659-3078. Genealogy mainly. Also IBM.

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Towards 2000!!. (408) 773-9759. 300/1200 8-N-1 24 hrs. IBM oriented. No Fee. Message base. Sysop: Keith Proctor/Chris III.

Travel BBS. (408) 727-8694. 1200. Run by travel agency. Email, travel-related files & info, reservations, monthly specials. Free, but registration required. Sysop: Mitch Butler.

TRS-80. (408) 374-5139. 300/1200 24 hrs. Tandy. Free. Sysop: Sam C. Brown.

True Hacker BBS. (408) 985-0773. 8-N-1, 24 hrs., 300/1200/2400. Dedicated to the free exchange of public domain source code. Sysop: Robert Matthews.

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415

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Amiga Addicts Anonymous (AAA). (415) 222-9416. 300/1200 24 hrs. Amiga Chat & Pub. Dom. files. Sysop: Randy Spencer

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Easy Access BBS. (415) 829-6027. 300/1200/2400 8-N-1 Sysop: Tony Waddell.

Emerald Lake Fog #48. (415) 361-1847. 300/1200/2400/9600. General info. DOS and CP/M. 232 MB. Wildcat BBS. Sysops: Dick Worth and Doug Spence

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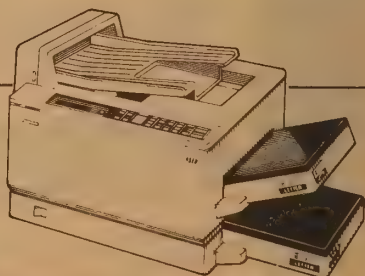
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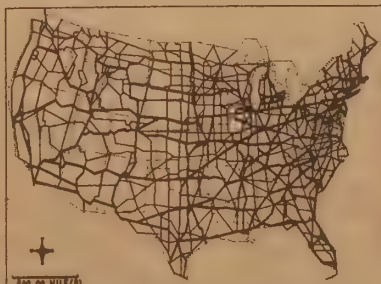
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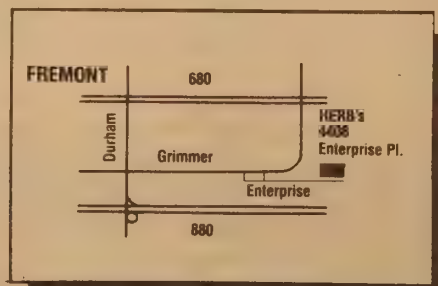
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Please! Ho, Ho, Ho, Yuk, Yuk.
Yuk, Tee Hee, Tee Hee. Tee Hee.
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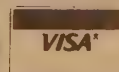
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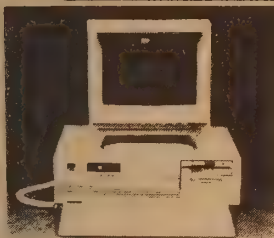


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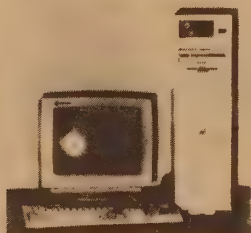
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Business Computerization User Group. Group forming. Write 6938 Buckingham Blvd., Berkeley, CA 94705, or call (415) 848-2080.

California Genealogical Society Computer Interest Group. Meetings: 2nd Sat. - odd months Genealogical Society Library, San Francisco.

COBOL And SQL Users Club Call: Dr. Badshah K. Mian, (415) 337-1787.

Computer Associates Users Group. Meetings: 3rd Wednesdays, 6:30 pm, 1500 Van Ness Ave., Call: Brenda Goldstein, (415) 864-6770.

Computers & Law Assoc. Meetings: McGeorge School of Law, 3200 Fifth Ave., Sacramento, CA 95817.

CYMA/McGraw-Hill Users Group Meeting. Meetings: Monday, October 24, 3:00-5:00 pm, McGraw-Hill Publications Building, 425 Battery St., San Francisco. Meet CYMA professionals and learn how to get the most from your software. Call: (415) 839-7466.

dbDVLPRS. Meetings: 2240 Buchanan, Ste. 5, San Francisco. Includes dBASE II, III, VI, Clipper, Foxbase, dBLX, Quicksilver and others. Call: Bruce Leandro, (415) 923-0659.

Digi-Dunces Un-Ominous. A meeting ground and exchange for the fat-of-finger, the hopelessly analogish, and patients of the electrogratification disease. Presently a confederation of various interests & occupations keeping one another apprised of relevant events & experiences. Contact: SASE, PO 884334, San Francisco 94188.

East Bay User Group. Meetings: 3rd Wednesdays, 7 pm, 12500 Campus Dr., Oakland, Rm R-7, Call: (415) 436-2453.

Entrepreneurial Support Group. CEO. Meetings: SASE, P.O. Box 2781, San Rafael, CA.

Ham Radio Computer Packet Group. Meetings: 2nd Fridays, 8 pm, Salvation Army, 4600 Applan Way, El Sobrante. Learn how to use your computer to broadcast all over the world with the fascinating world of Ham Radio. Call: Bob Fields, (415) 237-3761.

High Tech Gays. Meetings: 2nd Sundays, Part of the National Gay & Lesbian Task Force. Call: (408) 993-3830.

High Technology Entrepreneurial Council. Meetings: Wednesdays, 6:30 pm, Piedmont Community Center, 711 Highland Ave., Piedmont. HTEC is a nonprofit corporation dedicated to providing software developers and other high tech entrepreneurs a forum for developing marketing strategies, building business relationships and exchanging experience and information. Call: Rachel Munoz, (415) 339-3895

MORE: Modemusers Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 PM, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership

for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707) 546-5203.

Mt. Diablo Technology Association. First meeting: Wednesday, Sept. 14. Others monthly at Michael's Restaurant in Walnut Creek. Lunch and evening meetings, send for calendar. Back by popular demand. Will explore common concerns in industry and educational developments. Call: Deborah Scott, (415) 932-4828

Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call (415) 655-6500 for details.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 PM 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of computing. Determine market opportunities, group research projects. (415) 564-6669.

Nota Bene User Group. Meetings: 3rd Tues. or Thurs., 7:30 PM Berkeley or Peninsula. For location and date, call Thomas Ross, (415) 845-2410.

PASS: Professional Association of Secretarial Services. Meetings: 2nd Saturdays 11:30 AM, Scott's Seafood, Jack London Square, Oakland. Call: Nina Feldman, (415) 655-4296.

Pracsa, for Sysops & Users. Meetings: 2nd Wednesdays, 6:30 pm, Coco's Restaurant, 1305 South Mary, Sunnyvale. Call: Bill Strouse, (408) 453-3321.

Prolog Forum. Meetings: Monthly, 2nd Thursday 7:00 PM, Belmont and various locations. Prolog Forum is a group dedicated to supporting users of the Prolog computer language in artificial intelligence. Call Mark A. Epperson at (415) 594-9981.

ProTel (Professionals In Telecommunications) Meetings: Monthly. Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications. Leave a message at (415) 227-5637 for information.

SEF Marketing SIG. Meetings: Oct. 27—Telemarketing; Nov. 29—Teknowledge, 1850 Embarcadero, Palo Alto. Call: Don Morrison, (415) 8328-0356.

SEF OOP SIG. Meeting: Third Tues. 7 pm, Parc Place Systems, 2400 Geng Rd., Palo Alto. Call: Dean Ritz, (415) 859-1043.

SF Robotics Society. Meetings: 2nd Mon. Homestead Savings, Community Hall, 5757 Geary (at 22nd), SF. Guest speaker, developers' roundtable.

Silicon Valley Computer Society. Contact Kent Stafford (408) 286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Society For Technical Communication. Meetings: 2nd Wednesdays, Berkeley. Interna-

tional association of technical writers, editors, illustrators, and instructional designers. Call: Rae Montor, (415) 531-2315.

Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415) 854-7219.

Technology Executive Roundtable (TER) Meetings: Fourth Tuesdays, 6:00 pm, Santa Clara. Call: Jenny Hoyt, (408) 997-1826.

The Hispanic Computing Association. Meetings: 3rd Thursdays, DataDesigns/American Music, 2388 Mission St., SF. Spanish/English Computer Information, PC & Mac presentations and solutions. Call: Juan Lira, (415) 824-8337.

The Society For Technical Communication. Meetings: 1st Wed. 7:00 PM Room #3, SMUD Facilities, corner of Elkhorn and Don Julio, Sacramento. Devoted to the advancement of the theory and practice of technical communication.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 AM, Moose Lodge, Sonoma. All systems welcome. BBS, 300 BAUD, 24 hours, (707) 996-7922.

Women's Special Interest Group. 7:30 pm, Hewlett-Packard, 5301 Stevens Creek Blvd., Santa Clara. For all women interested in computing. Call: Rita Zokaei, (415) 574-8225

USER GROUPS

AMIGA

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Amiga Addicts Anonymous. Meetings: Newsletter, public domain library, demonstrations. Write PO 4669, Walnut Creek, CA 94596. Call: 689-3453

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues. 7 to 9 PM 11185 San Pablo Ave., in El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs. 5-7 PM Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri. Write to P.O. Box 1863, Fremont CA 94538 for more info.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs. 8 PM Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers.

No membership fee.

CWEST Bay Area Commodore Users Group. Meetings: Third Thursdays, 7:00 PM, Fort Mason, Bldg. C, Rm. 215. Support C-64/128 and Amiga. New Users welcome. Write PO 146731, San Francisco, CA 94114-6731.

Northern California Amiga Club. Meetings: Second Saturdays, 2 pm, Rico's. Supports Amiga. Write: PO 54, Bella Vista, CA 96008.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues. at 7 PM, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO 776, Castroville, CA 95012 for call Richard Binsacca at (408) 678-2518.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 PM. The Computer Room, Kings Village, Scotts Valley.

Vallejo Amiga People (VAMP). Meetings: 2nd Tues. 6:30 PM Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

AMSTRAD

North American Amstrad Users Group (NAAUG). National User group. For info send S.A.S.E. to NAAUG, P.O. Box 2178, Ferndale, WA 98240.

APL

APL Bay Area Users' Group. Meetings: 2nd Monday, 6:30 PM, I.P. Associates, 425 Sherman Ave., Suite 200, Palo Alto.

APPLE

A.P.P.L.E. Co-op. Meetings: National User Group. Call A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055. Or call (206) 251-5222 for more info.

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat. 10 AM Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707) 763-8322.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401, San Jose 95118. Printshop & Appleworks files, monthly newsletter.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

Gravenstein Apple IIGS Users Group. Meetings: 3rd Saturdays, 10:00 AM, Coddington Mall, Santa Rosa. User group to explore new and existing programs and uses for the IIGS, to order equipment and material as a group for quantity discounts and to encourage the use and development of the IIGS among current, new and potential users. Call: Aaron Lamar, president, 938-8479.

San Francisco Apple Core. Meetings: 3rd Saturdays, 10 am, Daly City Library, 40 Wembley. BBS, SIGS, PD/SW library, Help List, Newsletter, more. Call: 398-2335/771-5830.

San Leandro Apple User Group. Meetings: 1st Thursdays, San Leandro HS, Rm. 213. New owners to experienced users welcome. AppleWorks, software and telecommunications SIGs meet monthly. Call: (415) 483-6046.

Society For The Prevention Of Cruelty To Apples. Meetings: 2nd Wednesdays, 7:30 pm, Fremont Main Library, 39770 Paseo Padre Pkwy. Call: Dean Fern, (415) 537-3439.

Tri Valley Apple II Users Group. Meetings: 1st Thurs. 6:30 PM. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415) 828-6237 for meeting location.

ATARI

ABACUS (Atari Bay Area Computer Users Society). Meetings: 1st Saturdays, 19th Ave. Diner, 19th & Lincoln Aves., SF. Open to all Atari XL/XE and ST users. \$20/yr. Call: (415) 753-8483.

Bay Area Atari Users Group (BAAUG). Meetings: 1st Mon. 7:00 PM Bracher School, corner of Bowers and Chromite, Santa Clara. ST users meet at Bracher on 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. BBS: (408) 247-1257.

COAST (California Original Atari ST Users Group). Meetings: 3rd Wednesdays, 7 pm, 2105 Bancroft, Berkeley. Call: (415) 945-1949.

San Leandro Computer Club. Meetings: 1st Tuesdays, 8 pm, San Leandro Community Library. : (415) 352-8118 & 887-2008.

AT&T

Bay Area AT&T PC Users Group - South Bay. Meetings: 2nd Wed. 6:30 PM AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408) 733-6522. BBS: (408) 462-6329.

Bay Area AT&T PC Users Group. Meetings: 1st Wed. 6:30 PM Alternates between Oak. & SF. Call: Joe Mahoney (415) 586-8376. BBS: (415) 829-6027.

AUTOCAD

San Francisco/Marin AutoCAD Users Group. Meetings: 2nd Tuesday evenings. \$20 annual membership fee & newsletter. For further info, call Volker, 331-9466, or Virginia 777-4025.

Sonoma County AutoCAD Users Group. Call (415) 777-9144 for info.

BLIND USERS GROUP

International Blind Users Group (I-BUG). As a member you will receive 6 issues of Compu-Help-On-Disk as well as your own ID and password to CompuHelp. \$20/yr. Call: (916) 783-0364.

COMMODORE

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron

Kremkow at (415) 449-1784.

Campbell Chapter of 64/More Commodore UG. Meetings: 4th Tues. BBS (408) 946-6154.

Commodore 64 Software Users Group For New Commodore Owners. One-on-one help for new owners. Meeting place & time TBA by members. Call (714) 531-2977 for info.

Commodore Connection Users Group. BBS (415) 458-1005.

Commodore Users Group Santa Cruz. Meetings: 3rd Wednesdays, 2395 Delaware Ave., Santa Cruz. Call: Ruth Wieland, (408) 688-2843.

Cupertino Chapter of 64/More Commodore UG. Meetings: 3rd. Sat. BBS (408) 946-6154.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs. Fort Mason, Bldg. C, Rm. 215. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

Diablo Valley CUG. Meetings: 2nd Thurs. 7:30 1331 Concord Ave. For info write: Box 27155, Concord, CA 94527. Or call (415) 932-2413.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs. 7:30 PM Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributor.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon. Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

Marin Commodore Users Group. Meetings: 2nd Wednesdays, Redwood High. Call: 883-7748; BBS 883-2558—300/1200.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays, 7:00 PM, Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4 C-16 & 128. Call: Larry Anderson, 754-5530.

North Valley Chapter of 64/More Commodore UG. Meetings: 2nd. Sat. BBS (408) 946-6154.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/More Commodore UG. Meetings: 1st. Sun. BBS (408) 946-6154.

Silicon Valley Commodore Club. Meetings: 4th Wed. 7 PM Hewlett-Packard, 5301 Stevens Creek at Lawrence & 280. C-64, C-128, & Amiga.

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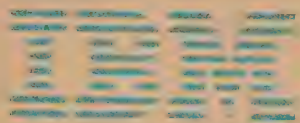
dBASE Users Group of Marin & Northbay. Meetings: monthly, call (415) 488-0342 for info. Open membership, beginners through developers.

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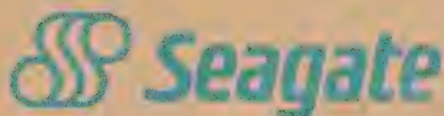
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Bay Area Desktop Publishing User's Group. Meetings: Tues. 7-9 PM Norman's Restaurant, 2601 College Ave., Berkeley. For more info call Dr. C.J. Wallia at (415) 848-8200.

Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415) 566-3648.

First Publisher User Group. Members make up 8 1/2 x11 formats for newsletters & tip sheets. \$35 annual membership. Contact Raul Ibanez (415) 550-0785.

PC Publishers Of Northern California. Meetings: 2nd Thursdays, 7 PM, 1415 Valencia St., San Francisco Newsletter, telephone hotline, reference library, education. Support Ventura, PC PageMaker, etc. Intro membership: \$24/yr. Information: Al, (415) 661-9270 or Donna, (415) 826-6640.

San Mateo Ventura Users' Group. Meetings: 2nd Mondays, 7:00-9:30 pm, 619 Bradford, Redwood City. Workshops, lectures, demonstrations of new techniques, shortcuts. Call: Eleanor Church, (415) 726-3181.

Ventura Desktop Publishing Users Group. Meeting: 1st Tuesday, 7-9:00 pm, 1650 S. Amphlett Blvd., San Mateo. Newly formed group. Call Eleanor Church at (415) 726-3181, or Pam Sheble at (415) 574-2003 for information.

VPUG (Ventura Publisher User Group) Meetings: 3rd Mon. 6:30 pm Fort Mason, Bldg. A., Rm. 5 San Francisco, CA.

DYNABYTE

Dynabyte - Tahoe City Dynabyte Users Group. Swap, buy/sell - boards, parts, units. Write to Drawer 2629, Olympic Valley, CA 95730 for info.

EAGLE

Eagle Computer Users Group. Meetings: 2nd Sat. 9:00-12 noon Tandem Computer, 10435 N. Tantau Ave., Cupertino. Call: (408) 972-1965.

EASYTRIEVE

Easytrieve Plus Users Group. Next meeting: June 14, Hyatt Oakland. Call Debbie at Pansophic, (415) 573-7100. All users welcome.

EPSON

Epson Users of San Francisco Bay Area. Meetings: 1st Thurs. 7-10 PM Fort Mason, Bldg. C, Rm. 216, San Francisco, CA. For users of Epson (QX, Equity, PX-8). Presentations, support network, newsletter, public domain software.

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First Publisher User Group. Members make up 8 1/2 x11 for-

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FORTH

Forth Interest Group of Silicon Valley. Meetings: 4th Sat. 1 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call George Shaw at (415) 276-5953 for info.

Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat. 1 to 5 PM South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw (415) 276-5953.

FOXBASE+

FoxBase+ User Group. PO 20607 Oakland, CA 94620. New group now forming. Call Rachel Cohen, (415) 465-3570.

GAVILAN

Gavilan User Group. Meetings: 2nd Thurs. 7 PM Lockheed Bldg. 162. Cal (408) 379-2774 for info.

HEATH

Bay Area Heath User Group (BAHUG). Meetings: 2nd Tuesdays, 7 pm, 2001 Middlefield Rd., Redwood City. Call: Ed Hayes, (415) 326-3311.

HYPERCARD

HyperCard SIG/GMUG. Meetings: 2nd Wednesdays, 7 pm, 78 A Mars St., San Francisco. Call: 641-GMUG.

HyperCard SIG/SEF. Foothill College. Call for dates and time: David Gewirtz, 345-4620.

IBM AND COMPATIBLES

A New PC-CLONE CLUB. Meetings: 1st permanent meeting Oct. 7, 8 pm, Cal State Hayward, Rm. 2078, Meiklejohn Hall. Members with experience and large Public library. Call: (415) 538-2449.

Accounting SIG/SFPCUG. Meetings: 4th Mondays, 7 pm. 179 Parnassus Ave., San Francisco. Call: G. Watson, (415) 398-3587.

AI - Expert Systems for Business (ESB). Investigate real business Expert System solutions for PC's. Guest speakers, discussions. Newsletter. \$18/yr, \$26/yr bus. Call 564-6669 for info.

Beginners SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: (415) 211-9166.

Berkeley PC/Compatible User Group. Meetings: 2nd Mondays, 7:00 pm, 2618 Telegraph Ave., Berkeley. No fee, bulletin board, public domain library. Call: Mel, (415) 526-4033.

C Language SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Rest., aurant2068 Center St., Berkeley. Call: Dan Baumbach, (415) 457-0729.

Clipper SIG/SFPCUG. Meetings: 4th Mondays, 7 pm, Rm. 1, Bldg. A, Fort Mason Center, SF. Call: Michael Palladino, (415) 751-2719.

Columbia SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chan-

cellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Dennis Tye, (415) 566-0587.

CUE Club. MS-DOS machines. SIGs for other computers. BBS:(209) 239-9853. For more info call (209) 858-4401.

DataPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Christy Quinn (415) 644-1855.

dBASE SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, 6 No. San Pedro Rd., San Rafael. Call: John Stephenson, (415) 488-0342.

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415) 566-3648.

Diablo Valley PC Users Group. Meetings: Walnut Creek, CA. Write: P.O. Box 8040, #117, Walnut Creek, CA 94596.

East Bay Fog. Meetings: Monthly meetings, Apostleship of the Sea, 600 Terminal St., Oakland. Newsletter, BBS. Call (415) 272-9099 for more info.

Enable SIG/SFPCUG. Meetings: 2nd Wednesdays, 7:30 pm, Walnut Creek. Call: Sandi Baker, (415) 946-1716.

Financial SW SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Rm. 1, Bldg. A, Fort Mason Center, SF. Call: Nick Maffei, (415) 668-2456.

FUNHUG—PC. Meetings: 3rd Wednesdays, 7:30 pm, Fremont Library, 39770 Paseo Padre Parkway, Fremont, in the Meeting Room. Mainly just the MS and PC DOS world. Send SASE to Russ Fischer, 2792 Arlington Place, Fremont 94555.

IBM & Compatibles Users Group (ICUG). Meetings: A mail-based user group with possible meetings. Not for PCjr's. \$8/yr. Write: Dan Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

IBM Compatible Users Group. Meetings: monthly, call (415) 969-6916 for info 7-10 PM.

IBM PC Users' Group Of The Redwoods (PCUGR). Meetings: 2nd Thursdays, 7 pm, Santa Rosa Vets Memorial, East Dining Rm. Newsletter, BBS, public domain & shareware disk library, \$25/yr. Call: (707) 527-USER.

IBM Technical SIG/SEF. Teknowledge. Call for dates and time. Call: Mike Schmit, 244-6826.

Kay+Fun Peninsula Computer Club. Meetings: 2nd Thursdays, 7:30 PM. Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415) 572-8219. Call: 593-9981.

Lotus SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Jerry Stern, (415) 282-4100.

Marin-Sonoma PC Users Group (MSPCUG). Meetings: Last Tuesdays, Tamalpais Ave. & 3rd Ave., San Rafael, Whistlestop Bldg. Call: (415) HAWK.

Mid-Peninsula IBM-Club. For

IBM employees only. Call Scott Maiden for info: (415) 855-4509.

Modula-2 SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, Call: Richard Lesnick, (415) 398-3587.

NewViews SIG/SFPCUG. Meetings: 4th Mondays, 7 pm, 179 Parnassus Ave., SF. Call: G. Watson, (415) 398-3587.

OtherPerfect SIG/SFPCUG. Meetings: 2nd Mondays, 7 pm, Kam's Restaurant, 2068 Center St., Berkeley. Call: Quisty Quinn, (415) 644-1855.

Paradox SIG/SFPCUG. Meetings: 4th Wednesdays. Call: Allen Greenkey. (415) 621-8478.

PC Clubhouse. Meetings: 1st Fridays, 8 pm, Cal State Hayward, Rm. 2078, Heiklejohn Hall. 2000 disk public library, expert help, software/hardware demos, \$24/yr. Call: (415) 538-2449 or 846-3575.

PC UNIX SIG. Meetings: 1st Wednesdays, 7 pm, AT&T Training Center, 1090 E. Duane Ave., Sunnyvale. Learn more about such UNIX versions as Microport, XENIX and Minix. Starting a library of public domain source code. Call: Dan Kionka, (408) 432-1300.

Sacramento PC User Group. Meetings: For information call Jackie Janssen at (916) 383-6900.

San Francisco Computer Society. Meetings: 1st Mon. 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

San Francisco PC Users Group. Meetings: 3rd Mondays, 7:30 pm, Auditorium, UCSF, Laurel Heights, 3333 California St., SF. Call: (415) 221-9166. BBS: (415) 621-2609.

San Francisco PCjr Users Group (SFPCjrUG). Meetings: First Sundays. 7:30 PM, Homestead Savings, 22nd Ave./Geary, San Francisco. Demonstrations and discussions, club library, disks for sale. Call: John King, 472-7035

Santa Cruz Computer Society. Meetings: 3rd Thursdays. 7 PM, Santa Cruz County Office of Education, 809 Bay Avenue, Suite H, Capitola. Call: 479-1180.

Silicon Valley Computer Society. Meetings: 4th Wed. 7:30 PM Oak Room, at Hewlett Packard, on Pruneridge in Cupertino. Call Kent Stafford for info at (408) 286-2969.

Silicon Valley FOG. Meetings: 3rd. Wed. 7:30 PM Saratoga Community Library, 13650 Saratoga Ave.

Solano Community PC Users Group. Meetings: 3rd Monday, 7 PM, Fairfield High School.

Solomon User Group Of Silicon Valley. Meetings: Wednesday, August 10, 6:30 PM, Conveyor And Storage Dynamics, 2581 Leghorn St., Mt. View. Call Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark, CA 94560; (415) 659-1515.

South Bay AT&T PC UG. Meet-

ings: Call for info. Call (408) 226-0116.

South Bay WordPerfect User Group. Meetings: Monthly, 13650 Saratoga Ave., Saratoga. Call: Martin Van Derpool, (408) 238-8434.

South County PC Users Group. Meetings: Round Table Pizza Restaurant, 22457 Foothill Blvd., Hayward. Call: R.A.McCloud, (415) 537-9899.

Teachers SIG/SFPCUG. Meetings: 3rd Mondays, 7:30 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Margaret Gwathmey, (415) 982-4221.

TRS Nybblers. Meetings: 2nd Friday, 8 PM, Chabot College, 2555 Hesperian Blvd., Rm. 600, Hayward. MS/DOS, CP/M, laptops, CoCo's, Mod 1, 3, 4; Mod 2, 12, 16, 6000. PD software education modules, problem solving committee.

Valley Computer Club IBM PC Users Group. Meetings: 3rd Wed. 6 PM Xerox Bldg. 475 Oakmead Pky, Sunnyvale, CA. \$24/yr member. Monthly VPUG News, access rights to VPUG-SIG Advice on desktop pub. techniques, new products, bugs, etc.

WordPerfect SIG/SFPCUG. Meetings: 3rd Mondays, 7 pm, Chancellor's Conf. Rm., UCSF, 3333 California St., SF. Call: Debbie Foster, (415) 285-4534.

INMAGIC

San Francisco INMAGIC User Group. INMAGIC Meetings: Monthly. Call for dates and times. Call: Dana C. Ellingen, 423-4582.

KAYPRO

BAKUP. Meetings: 3rd Tuesdays, 7:30 pm, Albany Senior Center, 846 Masonic Ave., Albany. Call: Bob Athey, (415) 526-3541.

Kay+Fun Peninsula Computer Club. Meetings: 7:30 PM, Social Room, 222 Laurel St., San Carlos. CP/M + DOS library. BBS: (415) 572-8219. Call: 593-9981.

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco CP/M and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

MACINTOSH

A32, The Association Of Apple 32 Users. Meetings: 2nd Saturdays, GTE cafeteria, Mountain View. Membership includes monthly meetings, access to Disk of the Month, full BBS privileges, the ICON newsletter, SIGs, discounts, and much more. Call: 263-0398.

APX, Inc. Macintosh. A national intercorporate computer users information service with several communications channels including an electronic forum on MacNet, newsletters, and local and national meetings and special panels. Several local chapters exist, you can start one too. Call: (408) 745-0665, or write to: Mike Bailey, APX, 370 Altair, PO 175, Sunnyvale, CA 94086.

Bay Area MacForum. Meetings: 3rd Saturdays, noon, Daly City Library, 40 Wembeleay. BBS, SIGS, PD/SW library, Help List, Newsletter, Newcomers Meeting, more. Call: (415) 771-5830/398-2335.

Berkeley Macintosh User Group (BMUG). Meetings: every Thurs. 6 PM Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs. San Francisco. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913. Bible Study and DTP SIGS.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs. San Jose. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913.

Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

EBMUG (East Bay Macintosh Users Group). Meetings: 3rd Tuesdays, 7:30 pm, 724 Allston Way (@4th) near University Ave., Berkeley. Members receive free PD software. Bring blank disk. Meetings open to everyone. Call: Terry Pennington, (415) 486-0147.

GMUG (San Francisco's Macintosh User Group for Gays and Lesbians). Meetings: 3rd Wednesdays, 7 pm, UC-Berkeley Extension Annex, 1930 Market St., Rm., #2G. Call: 641-GMUG.

HyperCard SIG/GMUG. Meetings: 7 pm, 78 A Mars St., San Francisco. Call: 641-GMUG.

Mac Diablo Users Group (MDUG). Meetings: 3rd Tues., Community Room, Glendale Federal Savings, 3101 Crow Canyon Road, San Ramon.

MacCruisers — Santa Cruz. Meetings: 2nd Wed. Jade Street Community Ctr. at 45th Ave., Capitola, CA.

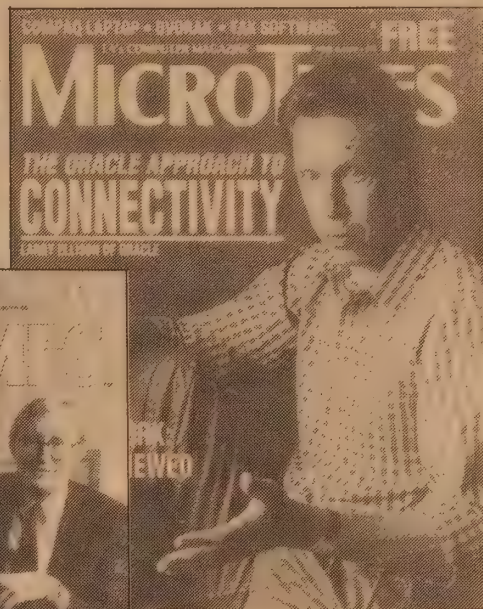
Macintosh SIG/SEF. Apple Cafeteria. Call for dates and time. Tony Meadow, 644-9400.

Macintosh Users Of ComputerWare (MUCoW). Meetings: 2nd & 4th Wednesdays, 7:00 pm, Above ComputerWare store, 490 California Ave., Palo Alto. Call: (415) 496-1051 or 496-1033.

MacNexus — Sacramento's Macintosh Users Group. Meetings: 3rd Thurs. 6:30 PM Call (916) 446-2411 for info. 350 members, but still informal. Extensive public domain collection.

Macs Of Marin (MOM). Meetings: 2nd Thursdays, 7 pm,

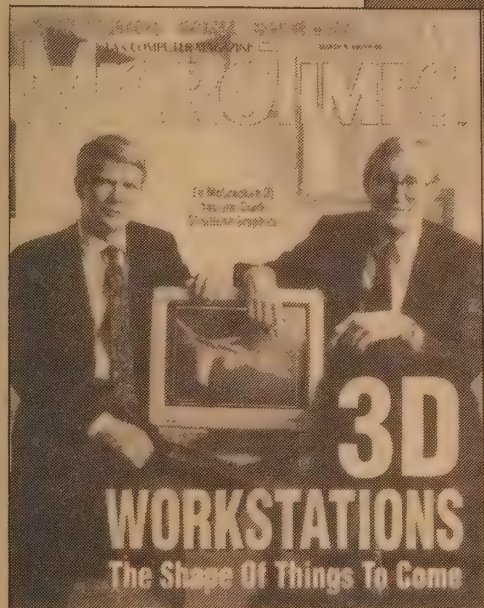
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Redwood High School, 395 Doherty, Larkspur. Call: Steve Salzman, 459-5707.

Silicon Valley Computer Society's Macintosh SIG. First meeting: September 21, 7:30 pm, 6th floor offices of Arthur Young and Co., Mitsubishi Plaza Bank Building, 55 Almaden Blvd., San Jose. A forum for shared ideas. First meeting will be a demonstration of HyperCard. Other demos are planned for future meetings. Call: Dennis Dawson, (408) 947-5550.

Stanford Macintosh Users' Group (SMUG). Stanford community membership: \$25; public membership: \$35 per year. Call: 723-SMUG. BBS: (415) 723-7685.

TI-West Meetings: 2nd Fri. 8 PM Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Tri-Valley Macintosh User's Group (TMUG). Meetings: 1st Thursdays, 7 pm, 4695 Chabot Dr., Rm 114, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Call: James (415) 426-8756 eves, Mike, (415) 838-6165.

MICROSOFT

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 PM, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

Microsoft Word Users Group. Meetings: 4th Mondays, 7:30 PM - 9:30 PM, Hewlett Packard-Cupertino-Oak Room Bldg., 48 Pruneridge, 100 yds. east of Wolfe off Hwy 280. August 22: Chris Donner, Pres. Access Softek on DRAGNET for Text Retrieval and Management. Call: Bill West, 356-8805.

Microsoft Word SIG of the SVCS. Meetings: 4th Mon. 7:30 PM Hewlett-Packard, Oak Room, Pruneridge at Wolfe, Cupertino. Contact Bill West (408) 356-8805 or Hunter Jackson (408) 446-4097.

MIDI

MIDICRUZ Computer and Music Users. Meetings: 1st Thurs., 7:30 PM, 200 Seventh Ave., Suite 225, Santa Cruz, CA

95062. Contact Robert at (408) 476-8464.

Silicon Valley Techno-Musicians Network. Computers, MIDI, electronic/computer music, home studios, all experience levels, all computers, all musical styles welcome. Call: Bob, (408) 733-3429.

MINDSET

San Francisco Mindset Users Group. Call: (415) 626-4240.

MORROW

BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues. 7:30 PM Albany Senior Center, 846 Masonic Street (just north of Solano) in Albany, CA. Voice: (415) 534-4257. BBS: (415) 654-3882. P.O. Box 5152 Berkeley CA 94705.

San Francisco Computer Society. Meetings: 1st Mon. 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

NEC

Bay Area NEC/100 Users Group. Meetings: 2nd and 4th Wednesdays. Locations vary. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102. Call (415) 658-1889.

NOVELL

Novell Users Group. Meetings: Third Wednesdays, 6:30 pm, Coco's restaurant, 1305 South Mary, Sunnyvale. Newsletter, bulletin board, product demos, assistance for beginners. Call: Bill Strouse, (408) 453-3321 days; modem, 24 hrs: (408) 453-3326.

ORACLE

Northern California Oracle UG. Meetings: Call (408) 738-8330 for info. Meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco. CPM and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

PARADOX

San Francisco Paradox Users Group. Meetings: 3rd Wednesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

San Francisco Paradox Users Group, South Bay Chapter. Meetings: 3rd Tuesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

TANDY/RADIO SHACK

BYTE Bandits of America. Meetings: Campbell. Call (408) 379-2774 for info.

CoCoByte. Meetings: Last Saturdays, 2 pm-4 pm. Supporting the Tandy Color Computer 11,2 or 3 with Spanish, English & French software. Write to: CoCoByte, c/o Fabian Rodriguez, A.A. 5976, Cali-COLOMBIA.

Model 100, 102 & 200 Support. Meetings: Int'l support by mail, voice & BBS. Free on-line weekly news letter. Write Club 100 984 Hawthorne Dr., Walnut Creek, CA 94596. Or call (415) 937-5039.

Tandy 1000 (The Mug). Mail-based user group w/ monthly newsletter. Not for PC jrs. Members communicate through newsletter. \$8/yr. fee; checks to: Daniel Tuma, 30 Arjang Ct., Alamo, CA 94507-2041.

Tandy 1000, 3000, 4000, And 5000 Users Group. A mail-based user group with monthly newsletter. Members communicate through newsletter. \$10/yr. Vincent Poy, c/o Tandy 1000, 3000, 4000, And 5000 User Group, 895 Pacific Ave. Suite #638, San Francisco, CA 94133-4340.

TRS Nybbilers. Meetings: 2nd Fri. 8 PM Chabot College, 25555 Hesperian Blvd., Hayward. MS-DOS, CP/M, laptops, Mod 1, 3, 4, Mod 2, 12, 16, 6000. Bud Gallagher (415) 522-5960 or Bruce Jarvis (415) 846-3575.

R:BASE

East Bay User Group. Meetings: Last Thursday of each month. For location and time, Call: Scott Longwell, 848-2080.

Northern California User Group. Meetings: Every 3 months. For schedule, Call: Ken Lebeiko, 881-2652.

San Jose User Group. Meet-

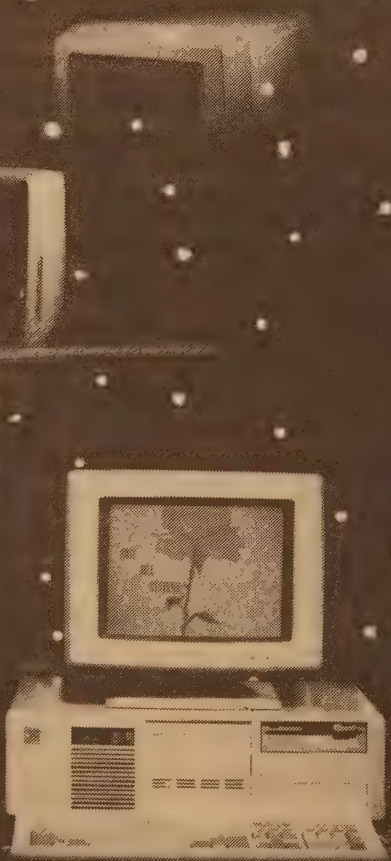
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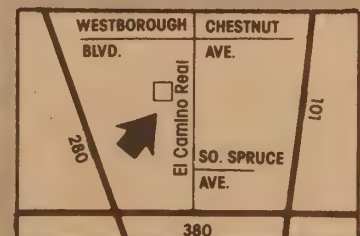
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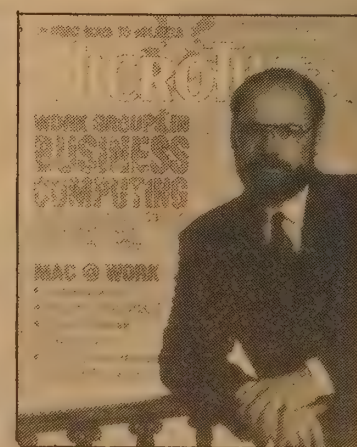
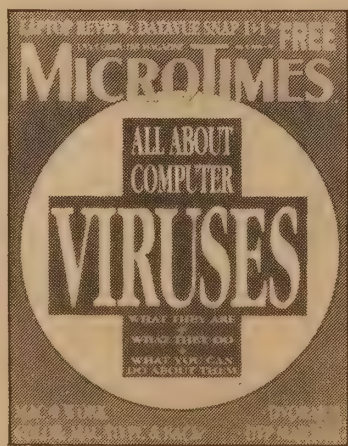
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ings: First Wednesdays. For location and time, Call: Hanna Varniz, 984-8484.

R:base User Group Of The East Bay. Meetings: Last Thursdays, 9 am. Call: Scott, (415) 848-2080.

REVELATION

Bay Area Revelation UG. Meetings: 1st Tues. Call (415) 759-1210.

SANYO

Sanyo PC Hackers. Meetings: 1st Wed. 7 PM Mercury Room, Mercury Savings & Loan, 99 El Camino Real, Menlo Park.

SOLOMON

San Francisco Solomon III Users Group. Meetings: last Wed., odd months 6-9 PM Price Waterhouse, 555 California St. 36th Fl., San Francisco. Annual membership - \$50; corp. membership - \$75.

Solomon User Group of Silicon Valley. Meetings: For info contact Grihalva Associates, 39899 Balentine Dr., Suite 175, Newark CA 94560.

S-100

S-100 Business Users Group. Meetings: 4th Tues. 7:30 PM Santa Clara Univ., Rm. 101, Bannan Engineering Bldg. CP/M & MS-DOS libraries. BBS: (408) 262-5150, 8-N-1, 2400/1200/300.

TEXAS INSTRUMENTS

Bay Cities User Group. Meetings: 1st, 3rd, 5th Wednesdays,

7:30 pm, 1637 Morgan, Mt. View. Call: Jack, (415) 964-4344.

Brea 99'ers Users Group. Meetings: 1st Mon. 7:30 PM Mercury Savings, La Habra, CA.

San Francisco 99ers. Meetings: 3rd Saturdays, 3751 Elston Ave. Call: Fred, (415) 530-8335.

Thousand Oaks Personal Computer Club (TOPCC). Meetings: monthly. Call: (714) 686-0336.

TIMEX/SINCLAIR

Timex Sinclair East Bay Z80 Users Group (TSEBZUG). John Ezike, (415) 843-5507.

Timex Sinclair Peninsula Users Group (TSPUG). Contact George Mockridge, (408) 878-1773.

Timex/Sinclair Users of Silicon Valley (GUTS/SV). Meetings: each Sat. 9 AM Stanford Univ., Jordan Hall (quadrangle), Math Bldg. RM 380C. SW library & newsletter. For topic check PDSE BBS in Sunnyvale (408) 735-7390, 300/1200, 8-N-1, 24 hrs.

UNIFY

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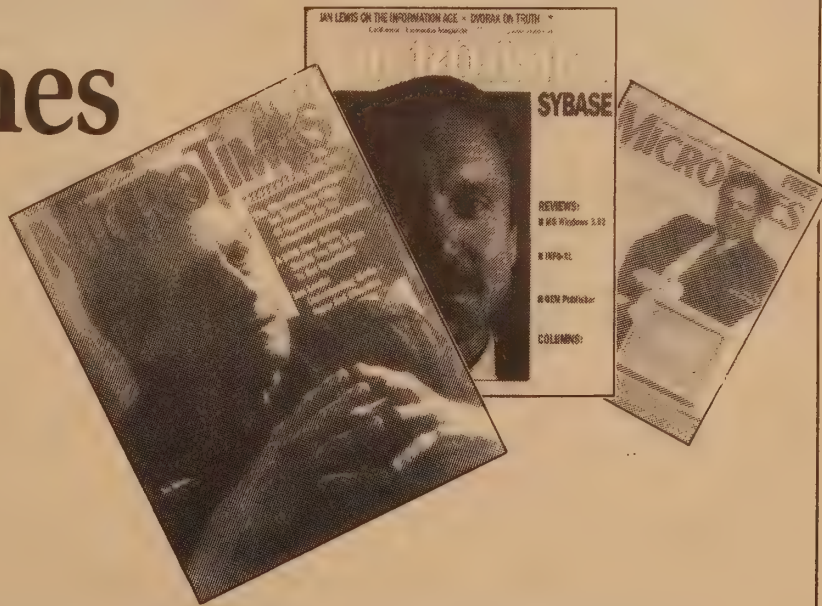
Here are the results:

1. PC Magazine
2. Byte
3. **MicroTimes**
4. MacUser
5. MacWorld
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7. Infoworld
8. Newsweek
9. Time

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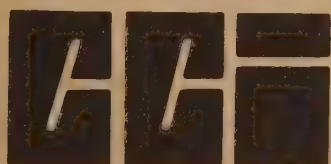
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Time To Fix The West Coast Computer Faire It's Broken

So what ever happened to the West Coast Computer Faire? Nothing that a little promotion couldn't fix. The recent edition (which was last month, if you missed it) will be the beginning of the end of the Faire if something isn't done soon.

The problem isn't a simple one to solve. Simply put, the show is too small to survive. The West Coast Computer Faire is the longest-running show west of Trenton and has historically been a nexus for the personal computer industry's West Coast action. Now it seems to be a nexus for smallish Taiwanese clone makers who can't risk attending a bigger show where the FCC will nab them for RF problems and lack of certification. Some nexus.

Of course, I should complain. I'm on the advisory board for the Faire and never find the time to go to the meetings. But this isn't the problem, either. It's promotion. I personally saw no (nada, zed, zero, zip) ads for the show. Maybe I don't look carefully, but I saw nothing and had to ask around for the show dates. In fact I almost missed it. Luckily *PC Magazine* executive editor Bill Howard was out from New York and HE reminded me.

A couple of years ago the promoters put on a Pioneers keynote where Wozniak, David Bunnell, Don Lancaster, Gary Kildall, and other luminaries told old war stories to the delight of a huge crowd in a huge hall in Moscone. This year's show was in Brooks Hall. The original West Coast Computer Faire was in the Civic Auditorium and Brooks Hall. How it shrank to this year's dinky proportions during boom times mystifies me. This year the speeches were given in drab Larkin Hall inside the Civic Center. It's a depressing place. The sound is terrible, the place is creepy.

It's apparent that the Interface Group has put this show on the back burner to emphasize its new MacDex add-on show to run parallel with money-making COMDEX, the company's bloated cash cow of a show.

Let's face it, local shows, even if they have national scope, should be owned and operated locally. Why would the Massachusetts-based Interface Group want to help San Francisco? It's a long drive from Needham and the company has had bad experiences in California. The most notable bad experience was a ill-fated COMDEX done in Los Angeles for a couple of years. Nobody came.

The heyday of the WCCF was about three years ago when Borland International, the Scotts Valley

software company, threw a boozy and wild Toga party complete with circus acts and scantily-clad women. If I recall, some guy even had a heart attack at the thing. Microsoft used to rent some mansion up on Broadway and throw a "private" wing-ding each and every West Coast Faire too. That fell by the wayside last year (or was it the year before?). It was a happening event.

If we see any party action nowadays it's during the Macworld Expo Show, the new computer event of computer events in the City. How this came to pass astonishes me. First of all, the Mac world Expo is run by Mitch Hall Associates, a company that is in the minor leagues if compared to the Interface Group. The joke of it is that the Macworld Expo is a one-vendor (Apple) show. You have Apple and a jillion third party suppliers. Why didn't the West Coast Computer Faire nab some of this action?

It seems that the need to remain eclectic overrides keeping up with the changes in the industry. After all, nobody really uses CP/M computers anymore, do they? So why cater to them? And while it's nice to have a few guys selling XT clones for \$399, this is not anything interesting. If an XT clone sold for \$19.95, it would still be a boring 1982 technology amongst a forest of 80386, SPARC, 68030, and MIPS screamers.

Leading edge is the key to events like this. People go to shows to see what's hot. You go to see your dream of the future. The West Coast Computer Faire showed little in the way of hot action. There was nothing at this year's show that you couldn't find being sold from a trunk of a '48 Ford at a computer swap meet in the parking lot of an abandoned Safeway.

So what will it take to re-establish the show as THE "in" show? Besides selling it, that is.

First of all, the Interface Group should give Jim Warren a \$500,000 employment contract for two years and have him do the promotion. Jim Warren founded the show and then sold it a few years back to Prentice-Hall who in turn sold it to Interface. Warren, although he wouldn't admit this, is above all a master of promotion. His techniques are unorthodox, but effective. One old trick of his was to produce an el cheapo bogus newspaper and mail it out to every subscriber in the Bay Area of *PC*, *Byte*, *MacUser*, etc. In this thing he'd emphasize all the great sessions and quote unquote fabulous products at the show. That's always spiced up with Warren's own brand of sleazy gossip, rumor mongering, and personalized bitching and moaning.

Warren also has the ear of the influential hilltop dwellers on the Peninsula. The missing hot technologies would be welcomed at the show. If the word goes out that the West Coast Computer Faire is

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the thing to attend, then the legions of technologists-in-the-know would lock-in on it like a heat seeking missile and goose-step to San Francisco with products and booths in tow. The public is attracted by the same magic, especially the kids out there who love computers. Most of the kids were completely missing from the show this year.

If Interface doesn't want to follow this tack, then I expect the days of the show are numbered. ■

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine and MacUser, and considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

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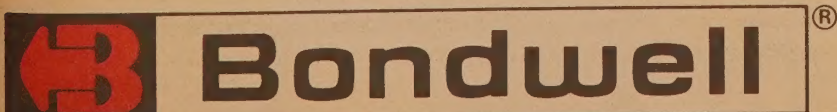
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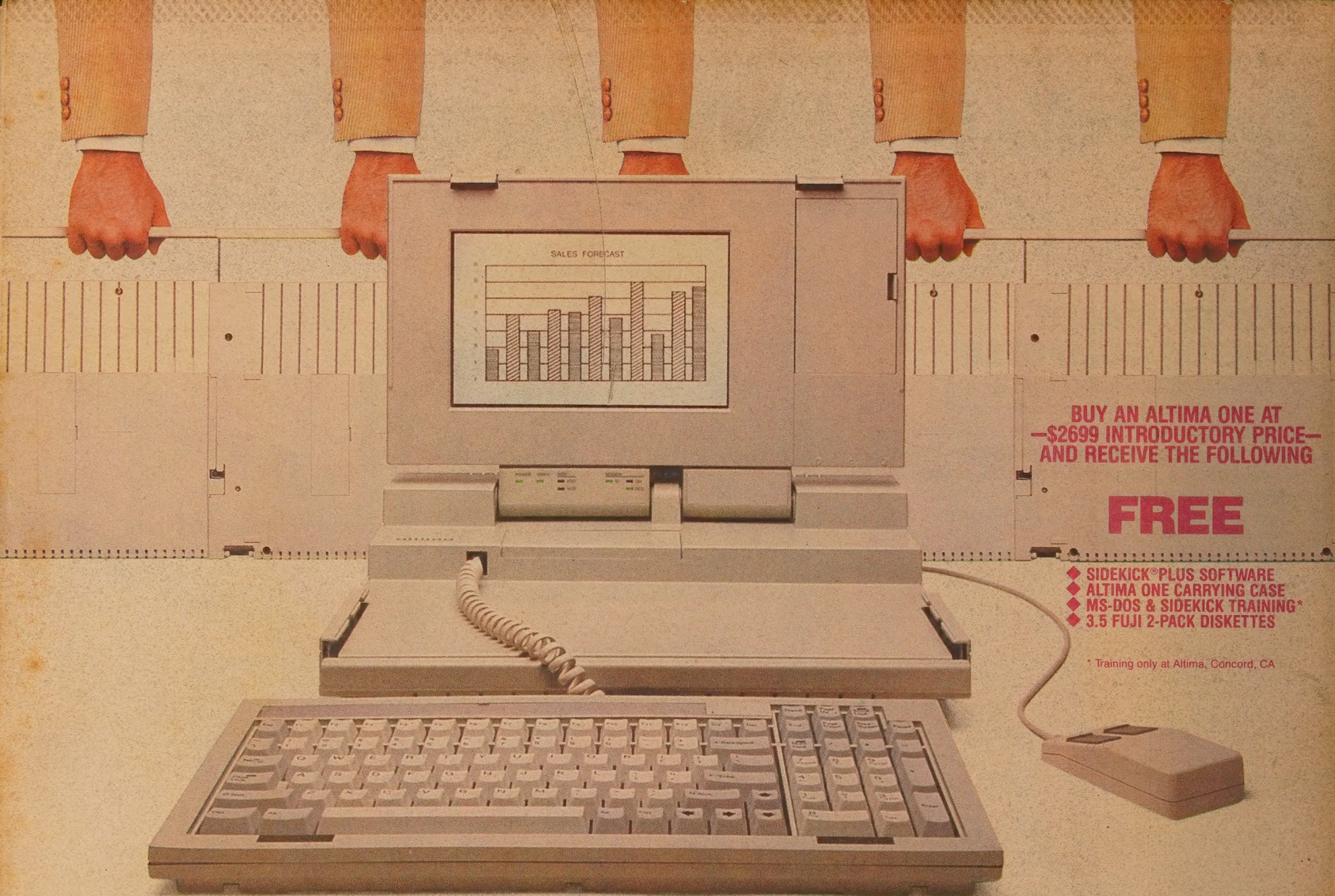
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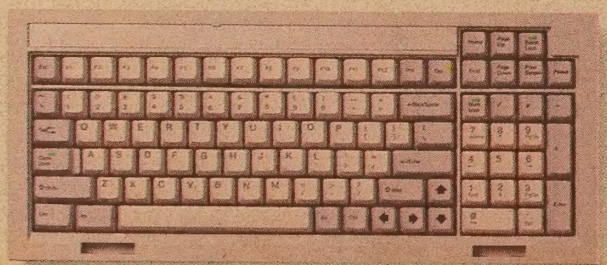
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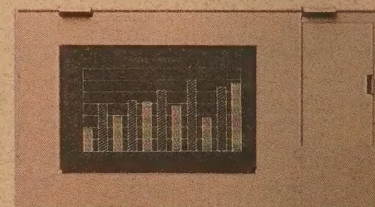
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